IE-MiniFiberLinX-II

Operation Manual

FCC Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class A computing device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

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Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

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About the IE-MiniFiberLinX-II

The IE-MiniFiberLinX-II is an optical demarcation network interface device, allowing fiber network operators to connect to and manage remote network segments. Advanced networking capabilities allow operators to easily observe both end points and the fiber link between them as a single management entity, rather than as separate networks. No host management traffic is visible to the remote or customer network nor is access to the customer network required, guaranteeing end-to-end data integrity. The IE-MiniFiberLinX-II offers 802.3ah OAM (passive), with firmware version B5 or higher. Management is also available via the copper port. See Mode One for configuration instructions.

The IE-MiniFiberLinX-II includes one 100 Mbps fiber port (OPTICS), one 10/100 twisted pair data port (DATA), and one auxiliary Craft port for serial configuration (with the included adapter). The twisted pair port can Auto Negotiate or be set manually for 10 or 100 Mbps, and half or full-duplex. The optics port operates at 100 Mbps, full duplex mode only. Powering options include AC and DC power as well as Power over Ethernet, functioning as a Powered Device (PD) compliant with 802.3af.

The IE-MiniFiberLinX-II is 802.1Q VLAN compatible, supporting a full-range of VLAN IDs, and offering Q-in-Q tagging and a 2-tier queue for differential prioritization (802.1p). The IE-MiniFiberLinX-II also includes the LinkLoss and FiberAlert as well as LinkFault Pass Through (LFPT) features for troubleshooting, loopback testing functionality, bi-directional bandwidth control, and optional protection against Broadcast storms. IMC Networks offers a Graphical User Interface (GUI) based element management system called iView^2, which runs on SNMP.

Single-strand fiber versions of the IE-MiniFiberLinX-II allow two wavelengths to share one fiber strand — Full-Duplex data travels on different wavelengths for example, 1310 nm and 1550 nm — doubling the capacity of fiber.

Management

The IE-MiniFiberLinX-II is capable of accepting IP-based management traffic from its Data and/or Fiber ports. Management can be configured on either port via the iView2 software, and requires firmware version B5 or higher. When connected to an iMcV-FiberLinX-II, Host-to- Remote management is IP-less.

iView^2 Management Software

iView^2 is a network management application for IMC Networks' intelligent networking devices. It features a GUI, which provides network managers the ability to monitor and control IMC Networks' products. The application is available in several versions and can also function as a snap-in module for HP OpenView

Network Node Manager. Refer to the iView² help files for information regarding configuring and managing the IE-MiniFiberLinX-II.

iView² supports the following platforms:

- Windows NT
- Windows 2000
- Windows XP

iConfig Utility

iConfig is an in-band utility created by IMC Networks, used for SNMP configuration for IMC Networks' SNMP-manageable devices.

The iConfig feature allows the following to be performed:

- Set an IP address, subnet mask and default gateway
- Define community strings and SNMP traps

iConfig also includes an authorized IP address system and restricted access to MIB groups which are supported by IMC Networks' manageable devices. These extra layers of security do not affect SNMP compatibility. iConfig can upload new versions of the system software and new MIB information. It also includes diagnostic capabilities for faster resolution of technical support issues.

Default Username/Password

The default user ID and password for both iConfig and Telnet are the following:

User: admin / Password:admin

Installation

To install the IE-MiniFiberLinX-II into a network environment, connect the proper twisted-pair and fiber cables. In a standalone configuration, or if direct management is desired, assign an IP Address to the IE-MiniFiberLinX-II after installation. Refer to Assigning IP Information for information on assigning an IP Address.

NOTE
Since single-strand fiber products use optics that transmit and receive on two different wavelengths, single-strand fiber products must be deployed in pairs or connected with two compatible IMC Networks single-strand fiber products. For example, connect IE-MiniFiberLinX-II, TX/SSFX-SM1310-SC (which has 1310 xmt and 1550 rcv) to a product which has 1550 xmt and 1310 rcv, e.g. iMcV-FiberLinX-II, TX/SSFX-SM1550-SC. The two connected products must also have the same speed and distance capabilities (i.e. both are single-mode [20 km] or both are single/PLUS [40 km]).

Autocross Feature for Twisted Pair Connection

All twisted pair ports on the IE-MiniFiberLinX-II include AutoCross, feature that automatically selects between a crossover workstation and a straight-through connection depending on the connected device.

Mini-Serial Port

Included with the IE-MiniFiberLinX-II is a serial port adapter for configuration.

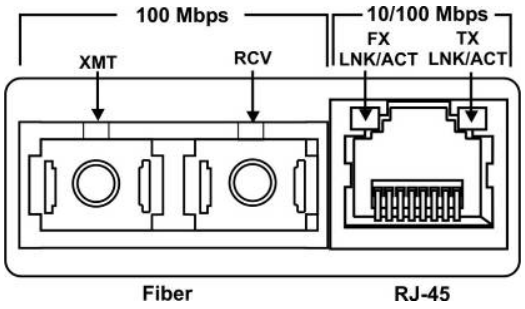
A standard AC mini-jack on the IE-MiniFiberLinX-II provides a local RS-232, Craft interface for management. A special mini-jack to DF-9F cable is provided for direct connection to a PC serial port.

NOTE
To log on through the serial port, set the computer/terminal for VT-100 emulation, with; 38.4K baud, 8 data bits, 1 stop bit, no parity, no FlowControl.

LED Operation

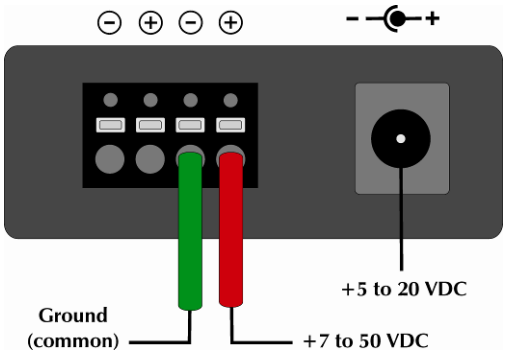
The IE-MiniFiberLinX-II features two diagnostic LEDs:

FX LNK/ACT	This LED is on when a FX Link exists and blinks when data passes through the fiber connection.
TX LNK/ACT	This LED is on when a TX Link exists and blinks when data passes through the twisted-pair connection.



Powering Options

The IE-MiniFiberLinX-II powering options include AC and DC power as well as Power over Ethernet, functioning as a PD compliant with 802.3af. The DC Terminal block allows you to daisy-chain one IE-MiniFiberLinX-II to another. To use the DC terminal block, connect to any one positive and any one negative terminal from a power source. The illustration shows the wiring configurations for the DC terminal block (7 to 50 VDC).



Features and Configuration

The IE-MiniFiberLinX-II offers a full feature set including Auto Negotiation, Selective Advertising, FiberAlert, AutoCross, read/write VLANs, SNMP management, bandwidth control, and loopback testing. Features can be configured through software or via a serial port, Telnet session, iConfig or SNMP.

Unit software updates can be downloaded through TFTP and iConfig.

Auto Negotiation, Duplex Mode and Speed

The twisted pair port on the IE-MiniFiberLinX-II Auto Negotiates for speed and duplex mode. The optics port does not Auto Negotiate; it operates at 100 Mbps Full-Duplex. Use the management software to configure the features on the twisted pair ports.

The IE-MiniFiberLinX-II ships from the factory with Auto Negotiation enabled on the twisted pair port. In this mode, the port automatically negotiates for speed and duplex.

The twisted pair port on the IE-MiniFiberLinX-II can also be manually set for 10 Mbps or 100 Mbps operation and for Half- or Full-Duplex (i.e. 10 Mbps Full-Duplex, 10 Mbps Half-Duplex, 100 Mbps Full-Duplex or 100 Mbps Half-Duplex).

Selective Advertising, when used in combination with Auto Negotiation, advertises only the configured speed and duplex mode for the twisted pair port. If a specific speed and/or duplex mode is desired, Selective Advertising should be used rather than Force Mode, when connecting to devices that ONLY Auto Negotiate.

Bandwidth Control

The IE-MiniFiberLinX-II includes bi-directional bandwidth control, which can be independently set in 32 Kbps increments up to 100 Mbps. Bandwidth control can be configured through iView^2 or a console session. The device features an integrating algorithm with a 64 Kb buffer, allows traffic bursts, to prevent lost data. This allows operators to offer tiered services. See the iView^2 for configuration information.

FX LinkLoss, TX LinkLoss and FiberAlert

During normal operation, link integrity pulses are transmitted by all point-to-point Ethernet devices. When an IE-MiniFiberLinX-II receives valid link pulses, it knows the device to which it is connected is up, and the copper or fiber cable coming from that device is intact. The appropriate link LED is lit to indicate this. For troubleshooting information using the LinkLoss and FiberAlert features of the IE-MiniFiberLinX-II modules, refer to the Troubleshooting section of this manual.

WARNING
The FiberAlert and LinkLoss features cause data interruptions designed to alert remote sites of line failures. These data interruptions can be misinterpreted as module failures when these features are enabled. Enable these features only when the resulting data interruptions and causes are well understood.

FX LinkLoss

FX LinkLoss is link integrity monitoring feature that forwards fiber link faults to the RJ-45 DATA port to indicate that a fiber link fault has occurred.

TX LinkLoss

TX LinkLoss is a link integrity monitoring feature that forwards an RJ-45 link fault to the fiber connected device to indicate that a link fault has occurred.

FiberAlert

FiberAlert minimizes the problems associated with the loss of one strand of fiber. Normally when a single strand of fiber is lost, the transmitting side of the connection is unaware that there is a fault. FiberAlert returns faults back on the fiber they came in on.

Using LinkLoss and FiberAlert

In a typical central site to remote site media conversion, it is recommended the LinkLoss and FiberAlert features are enabled as indicated in the following:

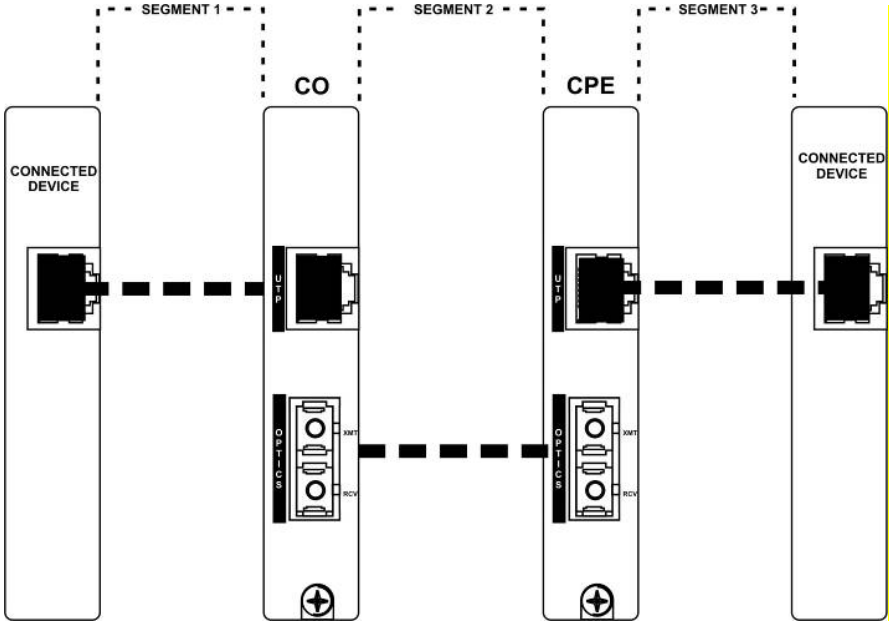
FiberAlert and LinkLoss			
Feature	**Enabled**	**Fault Location**	**Port Affected**
FiberAlert	Remote Side Only	Fiber	Fiber
TX LinkLoss	Remote Side (or both)	Twisted Pair	Fiber
FX LinkLoss	Host Side (or both)	Fiber	Twisted Pair

WARNING
Do not enable FiberAlert on both modules when using them in pairs. This will cause them to lock up when a fault occurs on the fiber. Only enable FiberAlert on the remote module.

Link Fault Pass Through (LFPT)

Link Fault Pass Through is a troubleshooting feature that combines TX and FX LinkLoss from both the local and remote modules. LFPT is enabled by turning on both FX and TX LinkLoss on both modules. This feature allows either end of the conversion to detect a link fault occurring at the other end of the media conversion chain.

Regardless whether a break occurs on a copper or fiber segment between the End device and the media converter, or between the two media converters, End devices at both ends.



Regardless if there is a break in segment 1, 2 or 3, the link will drop on the switches at both ends.

The link fault is passed through the media conversion and is observed at each end. It acts just like it would if the devices were directly connected.

Loopback Testing

The IE-MiniFiberLinX-II includes Loopback testing functionality. During loopback testing, management traffic entering the uplink port is still capable of managing the device. This is selectable form the UNIT screen in a serial/Telnet session or through iView^2.
The menu of choices in the CLI includes:

- No loopback, normal traffic mode
- Loopback Enabled
- Loopback, Source/Destination address swap
- Loopback, address swap and clear Multicast bit
- No learning on fiber or Data ports

The menu of choices in iView^2.includes:

- Off
- ON
- On- Address Swap
- On-Address swap + Clear MC

Loopback Testing on Remote or Standalone

No loopback, normal traffic mode
The standard mode in which the units function, either as stand-alone or Host/Remote.

Loopback Enabled
Loopback mode without address swap

Loopback, Source/Destination Address Swap
A Layer 2 Ethernet switch will discard all received packets with the same MAC address as sent packets. To avoid this issue the Loopback feature can swap the source and destination MAC addresses on the looped data. (This selection can cause a frame with a multicast source address to be created, which violates the IEEE standard.)

Loopback, Address Swap and Clear Multicast Bit
In addition to swapping the source and destination MAC addresses on the looped

data, the Loopback feature can also be set to clear the multicast bit. This allows the looped data to avoid being blocked by any multicast settings.

Loopback Testing in a Host/Remote configuration

The IE-MiniFiberLinX-II is strictly a CPE device; configuration on a Host would require an iMcV-FiberLinX-II; select No Learning on OPTICS and DATA Ports on the Host; on the Remote, choose SRC/DST Address Swap or Address Swap and Clear Multicast Bit.

Host: No Learning on OPTICS and DATA Ports

The Loopback feature can be set to disable address learning on the OPTICS (or UPLINK) and DATA ports, allowing the loopback to be performed without interference from MAC address filtering functions. This is a function on the HOST unit. Set the REMOTE unit for Loopback then set the HOST to disable learning so Loopback frames pass from the OPTICS port to the DATA port.

Remote: Source/Destination Address Swap

A Layer 2 Ethernet switch will discard all received packets with the same MAC address as sent packets. To avoid this issue the Loopback feature can swap the source and destination MAC addresses on the looped data.

OR

Address Swap and Clear Multicast Bit

In addition to swapping the source and destination MAC addresses on the looped data, the Loopback feature can also be set to clear the multicast bit. This allows the looped data to avoid being blocked by any multicast settings.

NOTE
Units should not be in the Default Mode when performing LoopBack tests.

Assigning IP Information

To utilize SNMP-management in a standalone environment, the IE-MiniFiberLinX-II IP configuration information (e.g., IP address, subnet mask, etc.) must be assigned by using iConfig (from iView^2), by using the unit's serial port or by using DHCP.

These methods will also allow you to create community strings, assign access rights, configure traps and more. iConfig offers more options than serial port configuration. After assigning the IE-MiniFiberLinX-II an IP address, use iView^2 or another SNMP-compatible Network Management System (NMS) for remote configuration, monitoring and management.

Configuration

The IE-MiniFiberLinX-II includes many features that function automatically or are configurable via iView², iConfig, or a serial/Telnet session.

Software Configuration

The following table presents port options configurable from iView² or from a serial/Telnet session. Refer to the iView² section later in this chapter or the iView² Help file for more information. For information on configuring VLANs, refer to the Serial Configuration/Telnet Session section in this chapter.

Feature	iView²	Serial/Telnet
FX/TX LinkLoss	✓	✓
FiberAlert	✓	✓
Loopback	✓	✓
Auto Negotiation	✓	✓
Selective Advertising	✓	✓
Force Mode	✓	✓
FlowControl	✓	✓
Bandwidth Control	✓	✓
VLANs		✓

The following table presents management options configurable via iConfig or a serial/Telnet session.

Feature	iView²	Serial/Telnet
PROM Software Download/Upload	✓	
Telnet Session	✓	
TFTP Trigger		✓
Software Download Setup (TFTP)		✓
DHCP		✓
Configuration File/Save Restore	✓	

The following options are configurable through both iConfig and Serial:

- IP Address
- Subnet Mask
- Default Gateway
- MIB Community
- Traps Assignment
- Users
- Passwords
- Access Level
- Reboot

Main Configuration Screen

Press **Enter**, at the prompt, to display the main configuration screen.

The following displays are available:

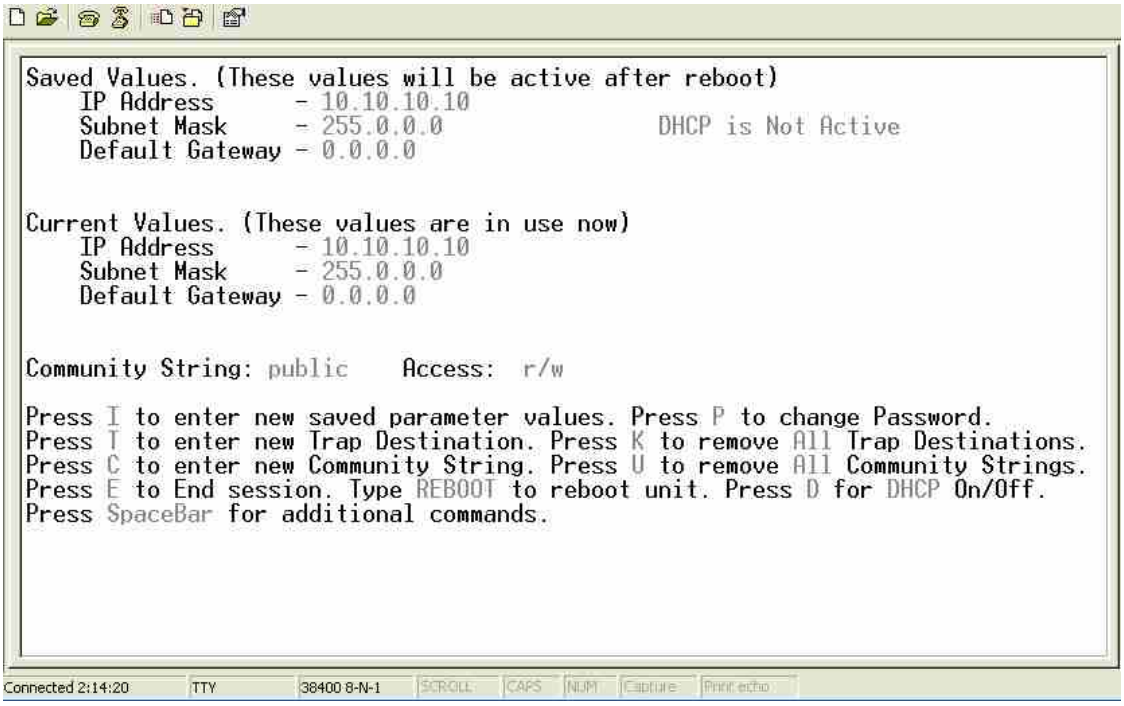
Saved Values (displays changes made during current session)

- IP Address (must be assigned during initial configuration)
- Subnet Mask (must be assigned during initial configuration)
- Default Gateway (default router for IP traffic outside subnet)
- Server IP Addr (for the TFTP server)
- New Prom File (firmware file name)

Current Values (displays values currently in use)

- IP Address (IP address of SNMP agent)
- Subnet Mask (mask to define IP subnet)
- Default Gateway (default router for IP traffic outside subnet)
- Server IP Addr (for the TFTP server)
- New Prom File (firmware file name)

NOTE
*Reboot the IE-MiniFiberLinX-II for changes to take effect. To reboot, type **reboot** at the prompt on the main configuration screen, or power cycle the chassis. If a **Delete** key is not available, use the **F2** key. Any changes to the configuration may result in a momentary loss of connection.*


Saved Values. (These values will be active after reboot)
IP Address - 10.10.10.10
Subnet Mask - 255.0.0.0
DHCP is Not Active
Default Gateway - 0.0.0.0
Current Values. (These values are in use now)
IP Address - 10.10.10.10
Subnet Mask - 255.0.0.0
Default Gateway - 0.0.0.0
Community String: public Access: r/w
Press I to enter new saved parameter values. Press P to change Password.
Press T to enter new Trap Destination. Press K to remove All Trap Destinations.
Press C to enter new Community String. Press U to remove All Community Strings.
Press E to End session. Type REBOOT to reboot unit. Press D for DHCP On/Off.
Press SpaceBar for additional commands.
Connected 2:14:20
TTY
38400 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo

Command List

I	=	Enter New Saved Parameter Values
P	=	Change Password
T	=	New Trap Destination
K	=	Remove ALL Trap Destinations
C	=	New Community String
U	=	Delete ALL Community Strings
E	=	End Session
Reboot	=	Reboots the IE-MiniFiberLinX-II
D	=	Enable/disable DHCP
Space Bar	=	Opens the Device Specific Configuration Options

Assigning TCP/IP Information

To modify the Saved Parameter Values (i.e., assign IP address and subnet mask), press **I**. Then, enter the IP address and subnet mask for the connected device, pressing **Enter** after each. A default gateway can also be assigned, or press **Enter** to skip. When finished, press **Enter**, then type **reboot** for changes to take effect. The Current Values can only be saved and acted on after the IE-MiniFiberLinX-II has been successfully rebooted.

Password Protection for Serial Port Connections

Password protection is provided for the serial configuration process by pressing **P** on the main configuration screen. Enter a password, keeping in mind that passwords are case-sensitive and must not exceed eight characters or include spaces, and press **Enter**. This password will be requested whenever logging on. To remove password protection, select **P** and, instead of entering a password, press **Enter**. If a password becomes lost, contact IMC Networks Technical Support at (949) 465-3000 or (800) 624-1070.

Assigning Trap Destinations

Traps are sent by the manageable device to a management PC when a certain event takes place. To enter a trap destination, press **T**. At the "Enter a New IP Address." prompt, enter the appropriate IP address and press **Enter**. Then, type the name of the community string (that the destination device has been configured to accept) and press **Enter**. This function enables ALL of the device traps. To individually activate and deactivate traps, use iConfig for configuration. Supported traps include: Link Down, Link Up, Cold Start, Warm Start and Authentication Failure.

Removing Trap Destinations

To remove all trap destinations, press **K**. Press **Y** to continue to confirm or **N** to abort and then, press **Enter**. To selectively remove community strings, use iConfig to configure the device.

Creating Community Strings

Community strings add a level of security to a network. The default community string is named "public" and has read/write access. "Public" should be replaced with custom community strings such as one with read-only access (for general use), the other with read/write access (for the administrator).

Steps:

1. Type **C** on the main configuration screen.
2. Enter the name of the new community (up to 16 characters, no spaces) and press **Enter**.
3. Type one of the following to assign the community string's access rights:

   R = read-only access
   W = read/write access
   Enter = abort
4. After entering **R** or **W**, press **Enter**.
5. To finish, press **Enter**, and reboot.

Deleting Community Strings

To delete all community strings, perform the following:

1. Press **U**. The "**Are you sure you want to delete all future strings?**" prompt displays.
2. Press **Y** to proceed, **N** to abort.
3. Press **Enter**.

This function will delete ALL community strings. To selectively delete community strings, use iConfig to configure the device.

Ending the Session

Be sure to press **E** to end a serial port or Telnet/HyperTerminal session, before disconnecting the cable. This will stop the continuous stream of data to the serial port.

Rebooting the Unit

To reboot the IE-MiniFiberLinX-II, type **reboot**.

Enabling/Disabling DHCP

To toggle DHCP on the IE-MiniFiberLinX-II between enable and disable, press **D**.

Additional Device-Specific Commands

Command Description
cleandb Reboot With Clean Database
download File Download from TFTP Server
ifstats Display Port Statistics
rmstats Display Port RMON Statistics
version Show Firmware Version
reboot Reboot Unit
security Configure Non-Standard Network Settings
port Display And Change Port Settings
config Set mode of operation
accounts Add or Delete Username/Password Accounts
sysdescr Change System Descriptions
unit Display And Change Unit Settings
bw Display And Change Bandwidth Settings
->
Press RETURN To Go Back To Main Screen.
Connected 2:14:47
TTY
38400 8-N-1

The IE-MiniFiberLinX-II also includes the following device-specific options.

To access these options, perform the following:

1. Press the **Space Bar** when in the Command List section of the Main Configuration screen (serial configuration/Telnet session).
2. Type the name of the action (shown below) and press **Enter**.

cleandb	Reboots the unit with a clean database. This removes all information from the database and sets the unit to factory defaults.
download	Downloads firmware via the TFTP protocol
ifStats	Displays Ethernet statistics
rmStats	Displays RMON statistics
version	Displays the unit's serial number and build date
reboot	Reboots the unit and clears all internal counters.
security	Allows ARP request configuration. This setting is only for very unique configurations and should not be adjusted.
port	Displays and changes port settings, such as duplex status and speed.

config	Allows VLAN and transparency mode configurations.
accounts	Allows the addition of new users.
sysdescr	Allows the editing of sysName, sysDescr, and Port information text.
unit	Unit Global Setting
bw	Bandwidth Limiting Controls
sfpstats	Provides information about the wavelength, serial number, output power, BER, and other useful information.

Cleandb

Entering cleandb reboots the unit with its database cleaned depending on the option selected. Users are presented with two, sequential options, first to reset all SNMP settings and, second, to reset all of the unit's configuration to default. Enabling the first option presents the second. Resetting the unit to factory default values (option two) will delete all custom IP and VLAN settings.

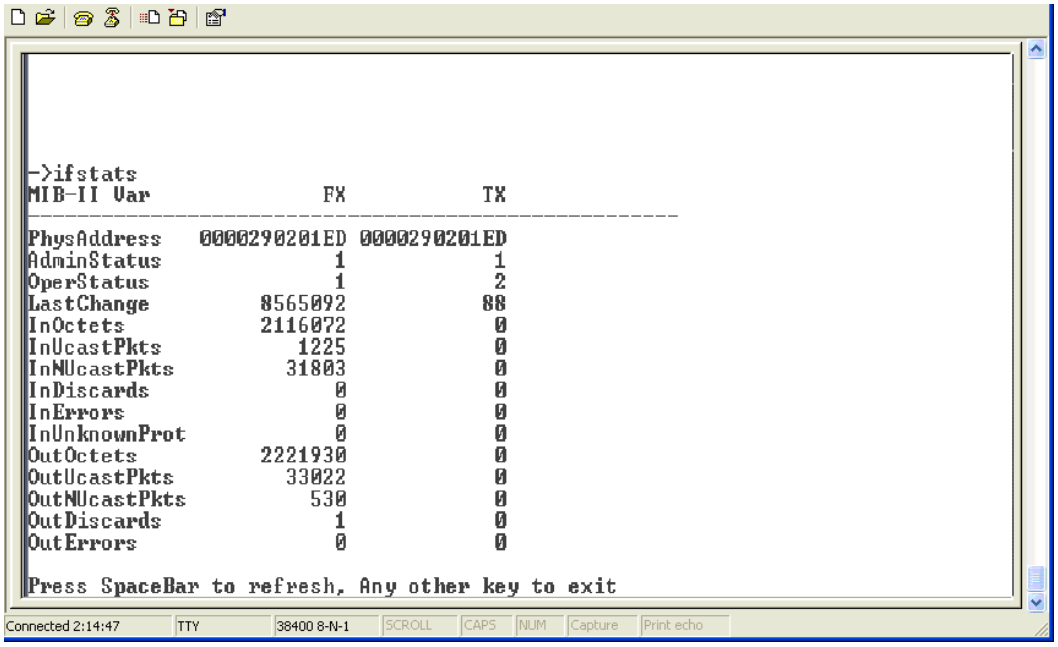
Downloading Files

Firmware for the IE-MiniFiberLinX-II can be downloaded from a central server via TFTP protocol. Initiate this download via serial configuration or Telnet session. To download a file, type **download** and press **Enter** to be taken to the Download a file screen. This screen displays the IP Address of the TFTP server and the name of the file to be downloaded. The TFTP server should be open. Make sure the IP Address and the name of the file are correct in the Current Values section of the Main Configuration screen. These are changed by entering **I** from the Main Configuration screen. Press **Enter** to start downloading the file.

Viewing Port Statistics

To view port statistics on the IE-MiniFiberLinX-II, enter ifstats. This will open a screen displaying information on packets received and transmitted as defined by MIB-II standard RFC 1213.

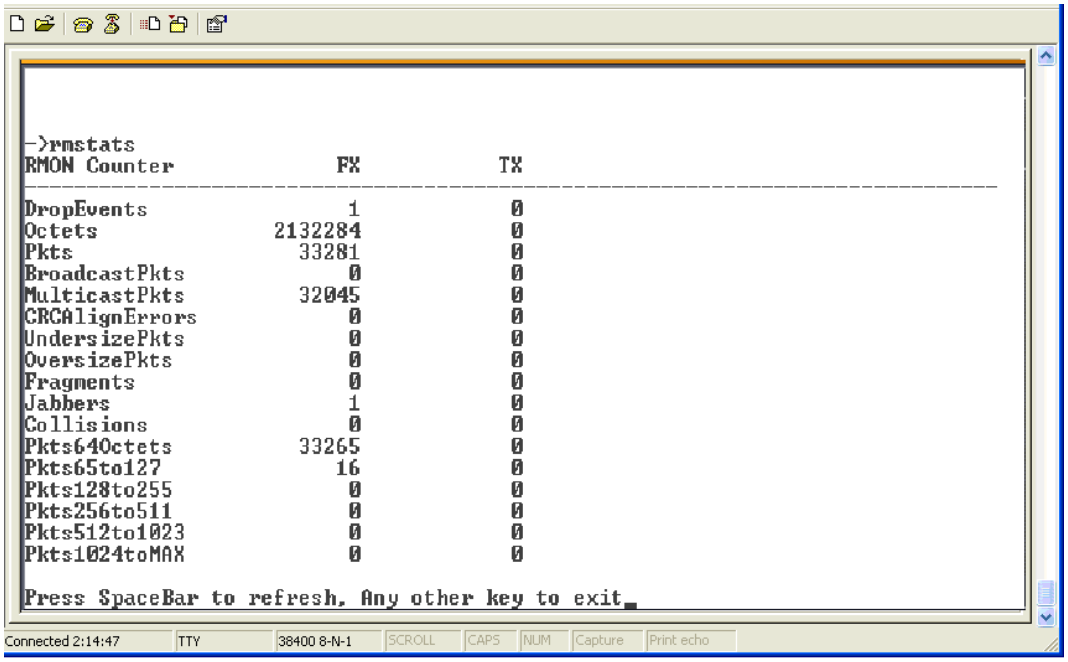
Pressing the **Space Bar** will refresh the data on the screen.



Viewing Port RMON Statistics

To view port RMON (Remote MONitoring) statistics on the IE-MiniFiberLinX-II, enter rmstats. This will display RMON information on packets received as defined in RFC 2819 for RMON.

Pressing the **Space Bar** will refresh the data on the screen.



Version

Entering **version** will display the version of the firmware operating the IE-MiniFiberLinX-II.

NOTE
In the examples shown, ports are referred to as how they appear on the unit itself. Some screens may show TX and FX for the port titles. In this case, TX = DATA port and FX = OPTICS port.

Reboot

Entering reboot will save settings and reboot the IE-MiniFiberLinX-II.

Setting Security

Security settings on the IE-MiniFiberLinX-II are reserved for non-standard configurations. Most users won't utilize this screen. Security configuration should only be utilized when non-standard networking equipment is being employed. Enter **Y** to set new security settings or any other key to abort.

The next screen that appears will configure ARP settings, such as the destination address of ARP messages along with Ethernet Types. Enter the new data, then press **S** to save the settings or **Q** to quit.

Port Configuration

Serial/Telnet sessions display port status as well as allowing configuration of some port features. Type **port** and press **Enter** to be taken to the Port screen. From this screen, view the port speed, duplex and link status.

The Port screen contains the following commands:

Port Enable	Enable/Disable the port. (Select Enable to enable the port.)
Admin Status	Set Administration level. (Select UP to enable the port.) Both settings must be enabled to enable the port.
Port Speed Ctrl	Set the port manually or for Auto Negotiation.
Advertise Ctrl	This is the Selective Advertising feature. Selective Advertising, when used in combination with Auto Negotiation, advertises the configured speed and duplex mode for the twisted pair ports. Auto Negotiation must be enabled for Selective Advertising.

NOTE
Selective Advertising must be used when connecting to a device that Auto Negotiates and a specific speed and duplex mode is desired.

Advertise FlowC and **Force FlowCtrl** - This is the FlowControl feature.

- When using FlowControl functionality on any port, enable Global FlowControl. Then, configure each port individually.
- When using Auto Negotiation and FlowControl, set Advertise FlowC to Advertise Flow and set Force FlowCtrl to Flow Auto.
- Set Advertise FlowC to No Flow to disable FlowControl on a given port.
- When using FlowControl and Force Mode on a given port, set Advertise FlowC to Advertise Flow and set Force FlowCtrl to Frc FlowCt.

Unit FlowControl This enables/disables FlowControl functionality on the unit and must be enabled for FlowControl to function on any port.

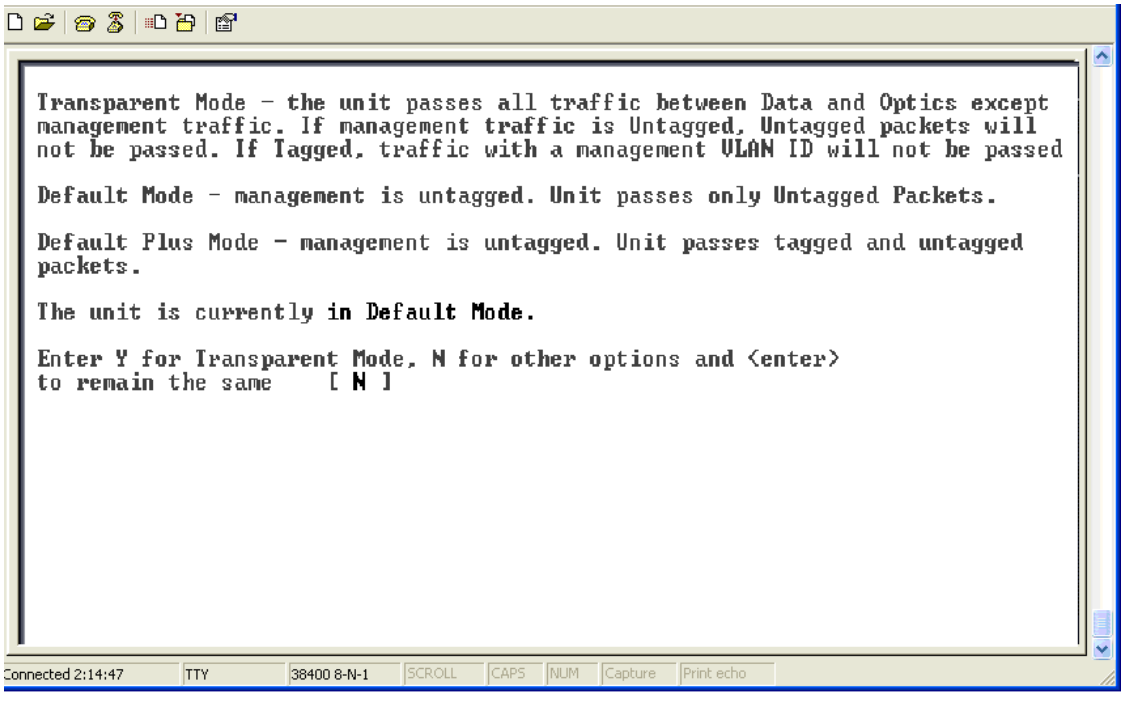
Operational Mode Configuration

As referenced in Product Applications, there are six modes of operation that can be configured through the Serial/Telnet session. All of the modes of operation will block management traffic on the Data port.

The configuration screen is accessed by typing **config** and pressing **Enter** from the Additional Commands screen.

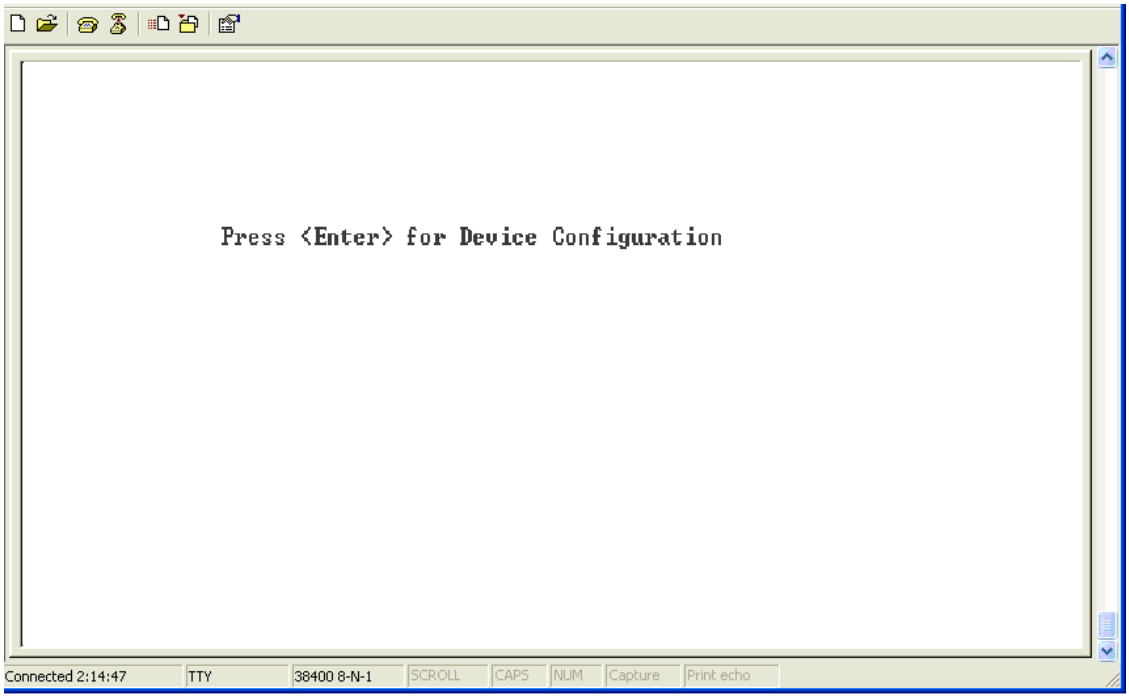
Mode One – Default and Default Plus

The default mode is designed to pass untagged traffic only. Press **F4** to return to the Additional Device-Specific Commands screen. In Default Mode Plus, all tagged and untagged traffic passes between the data and optics ports. Management to the device must be untagged.

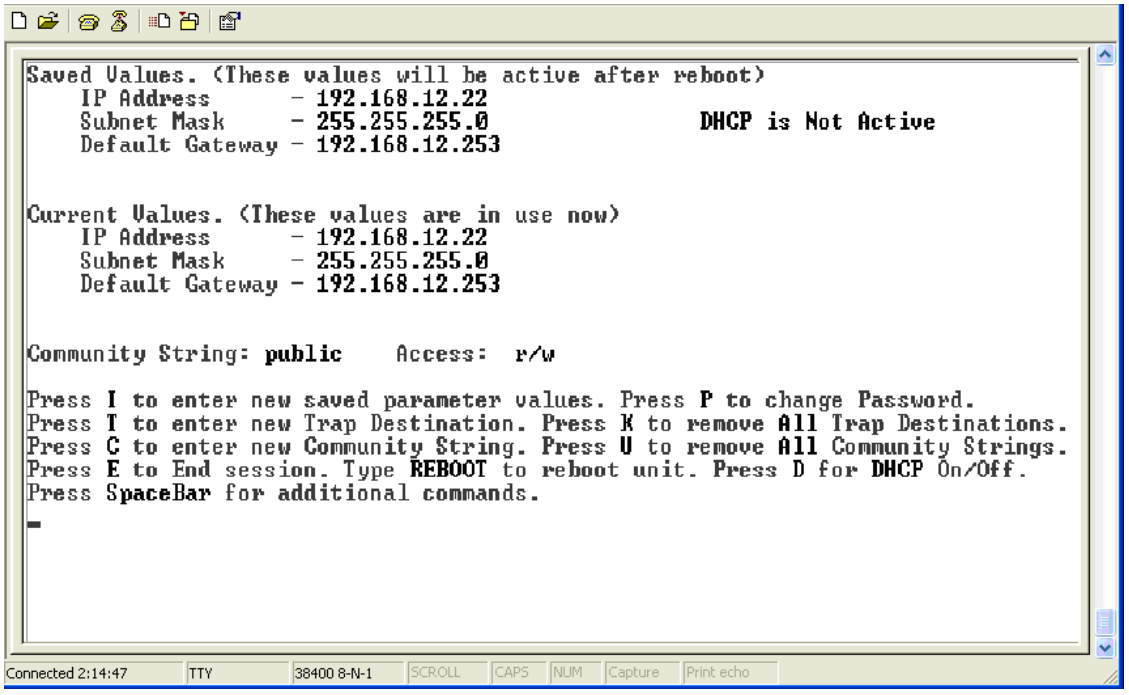

Transparent Mode - the unit passes all traffic between Data and Optics except management traffic. If management traffic is Untagged, Untagged packets will not be passed. If Tagged, traffic with a management VLAN ID will not be passed
Default Mode - management is untagged. Unit passes only Untagged Packets.
Default Plus Mode - management is untagged. Unit passes tagged and untagged packets.
The unit is currently in Default Mode.
Enter Y for Transparent Mode, N for other options and <enter> to remain the same [N]
Connected 2:14:47
TTY
38400 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo

How to configure the IE-MiniFiberLinX-II for management on the copper port

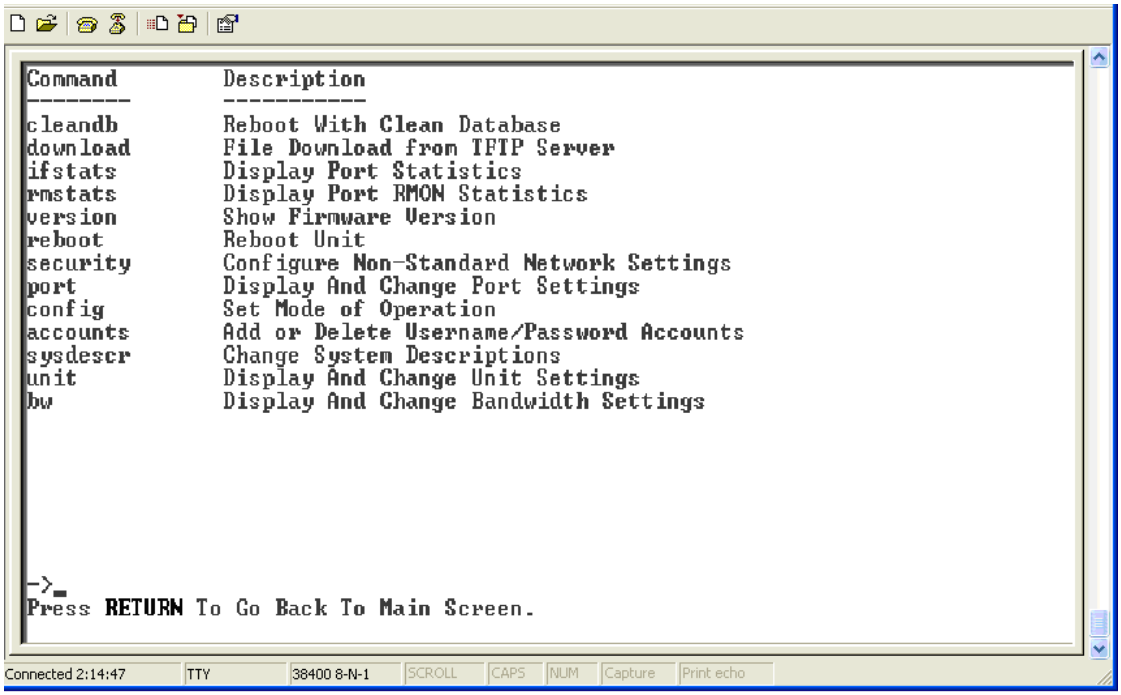
1. Configure the device to be set in the default mode. If unsure of the device's configuration, perform a **cleandb** which will set the device to the default setting. This resets the IP address (see page 14 for information on the cleandb function).
2. Make sure that the version of firmware is 722-10b5 or higher.
3. Telnet into the device.



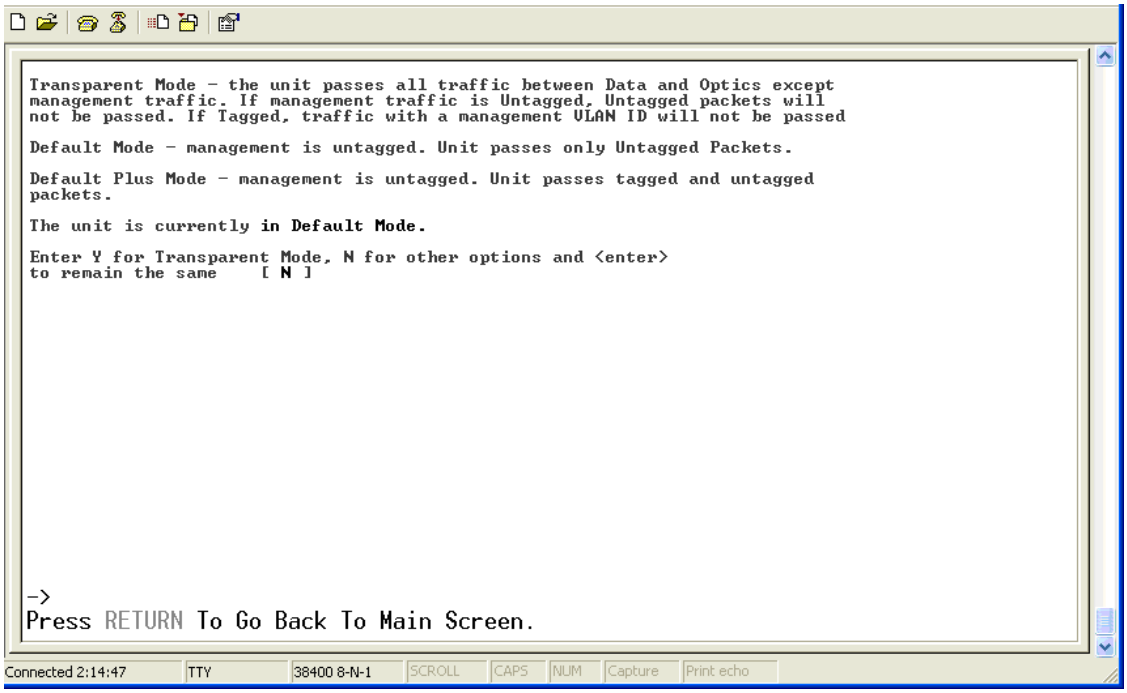
Press **Enter** for device configuration mode.


Saved Values. (These values will be active after reboot)
IP Address - 192.168.12.22
Subnet Mask - 255.255.255.0
DHCP is Not Active
Default Gateway - 192.168.12.253
Current Values. (These values are in use now)
IP Address - 192.168.12.22
Subnet Mask - 255.255.255.0
Default Gateway - 192.168.12.253
Community String: public Access: r/w
Press I to enter new saved parameter values. Press P to change Password.
Press I to enter new Trap Destination. Press K to remove All Trap Destinations.
Press C to enter new Community String. Press U to remove All Community Strings.
Press E to End session. Type REBOOT to reboot unit. Press D for DHCP On/Off.
Press SpaceBar for additional commands.
Connected 2:14:47
TTY
38400 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo

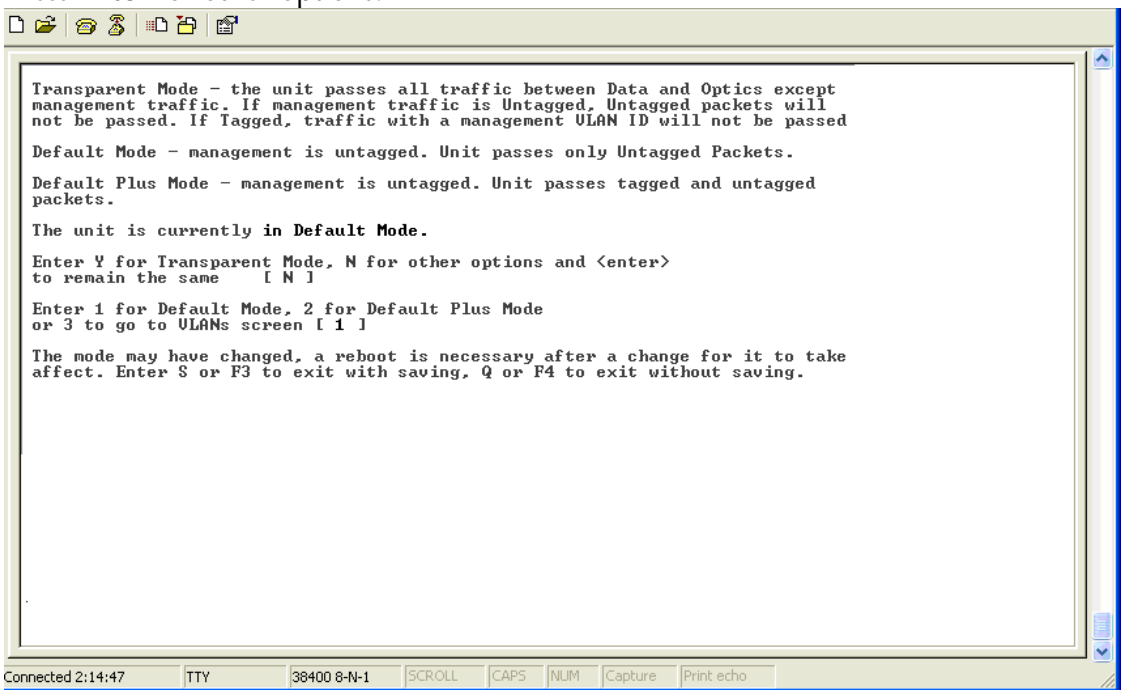
Press the **Space Bar** once for access to additional commands.


Command Description
cleandb Reboot With Clean Database
download File Download from TFTP Server
ifstats Display Port Statistics
rmstats Display Port RMON Statistics
version Show Firmware Version
reboot Reboot Unit
security Configure Non-Standard Network Settings
port Display And Change Port Settings
config Set Mode of Operation
accounts Add or Delete Username/Password Accounts
sysdescr Change System Descriptions
unit Display And Change Unit Settings
bw Display And Change Bandwidth Settings
->
Press RETURN To Go Back To Main Screen.
Connected 2:14:47 TTY 38400 8-N-1 SCROLL CAPS NUM Capture Print echo

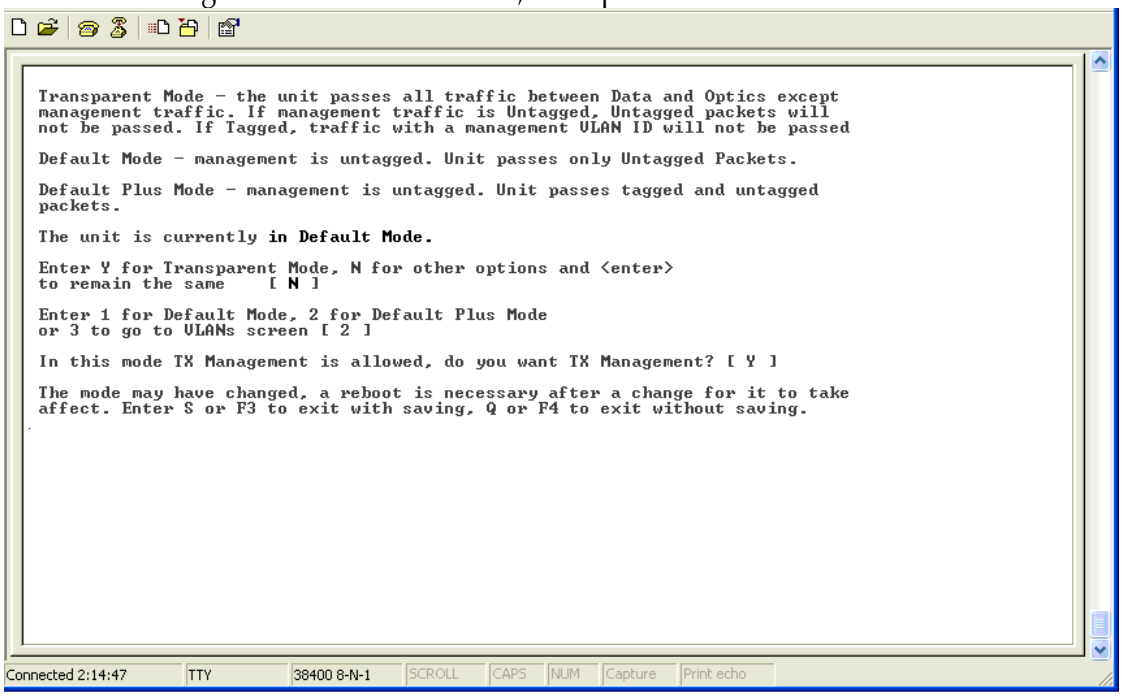
Type **config** then press **Enter** to set the operation mode.


Transparent Mode - the unit passes all traffic between Data and Optics except
management traffic. If management traffic is Untagged, Untagged packets will
not be passed. If Tagged, traffic with a management VLAN ID will not be passed
Default Mode - management is untagged. Unit passes only Untagged Packets.
Default Plus Mode - management is untagged. Unit passes tagged and untagged
packets.
The unit is currently in Default Mode.
Enter Y for Transparent Mode, N for other options and <enter>
to remain the same [N]
->
Press RETURN To Go Back To Main Screen.
Connected 2:14:47 TTY 38400 8-N-1 SCROLL CAPS NUM Capture Print echo

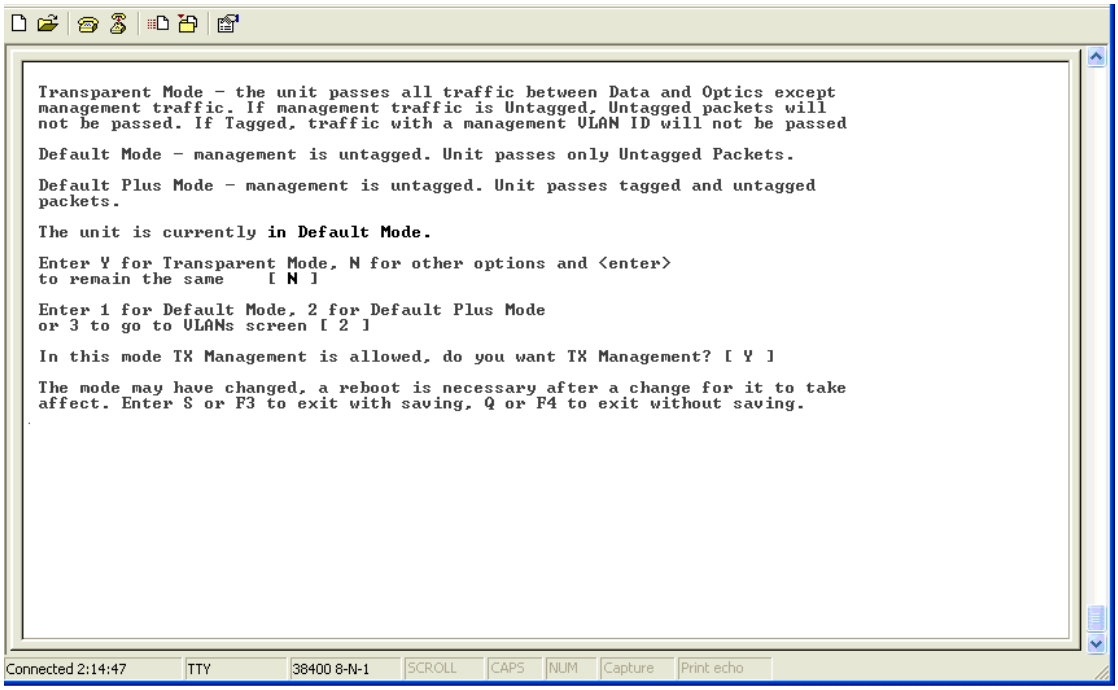
Press **Enter** for other options.


Transparent Mode - the unit passes all traffic between Data and Optics except
management traffic. If management traffic is Untagged, Untagged packets will
not be passed. If Tagged, traffic with a management VLAN ID will not be passed
Default Mode - management is untagged. Unit passes only Untagged Packets.
Default Plus Mode - management is untagged. Unit passes tagged and untagged
packets.
The unit is currently in Default Mode.
Enter Y for Transparent Mode, N for other options and <enter>
to remain the same [N]
Enter 1 for Default Mode, 2 for Default Plus Mode
or 3 to go to VLANs screen [1]
The mode may have changed, a reboot is necessary after a change for it to take
affect. Enter S or F3 to exit with saving, Q or F4 to exit without saving.
Connected 2:14:47
TTY
38400 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo

Press **2** to change to Default Plus Mode, then press **Enter**.


Transparent Mode - the unit passes all traffic between Data and Optics except
management traffic. If management traffic is Untagged, Untagged packets will
not be passed. If Tagged, traffic with a management VLAN ID will not be passed
Default Mode - management is untagged. Unit passes only Untagged Packets.
Default Plus Mode - management is untagged. Unit passes tagged and untagged
packets.
The unit is currently in Default Mode.
Enter Y for Transparent Mode, N for other options and <enter>
to remain the same [N]
Enter 1 for Default Mode, 2 for Default Plus Mode
or 3 to go to VLANs screen [2]
In this mode TX Management is allowed, do you want TX Management? [Y]
The mode may have changed, a reboot is necessary after a change for it to take
affect. Enter S or F3 to exit with saving, Q or F4 to exit without saving.
Connected 2:14:47
TTY
38400 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo

Press **Y** to allow TX management, then press **Enter**.


Transparent Mode - the unit passes all traffic between Data and Optics except
management traffic. If management traffic is Untagged, Untagged packets will
not be passed. If Tagged, traffic with a management VLAN ID will not be passed
Default Mode - management is untagged. Unit passes only Untagged Packets.
Default Plus Mode - management is untagged. Unit passes tagged and untagged
packets.
The unit is currently in Default Mode.
Enter Y for Transparent Mode, N for other options and <enter>
to remain the same [N]
Enter 1 for Default Mode, 2 for Default Plus Mode
or 3 to go to VLANs screen [2]
In this mode TX Management is allowed, do you want TX Management? [Y]
The mode may have changed, a reboot is necessary after a change for it to take
affect. Enter S or F3 to exit with saving, Q or F4 to exit without saving.
Connected 2:14:47
TTY
38400 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo

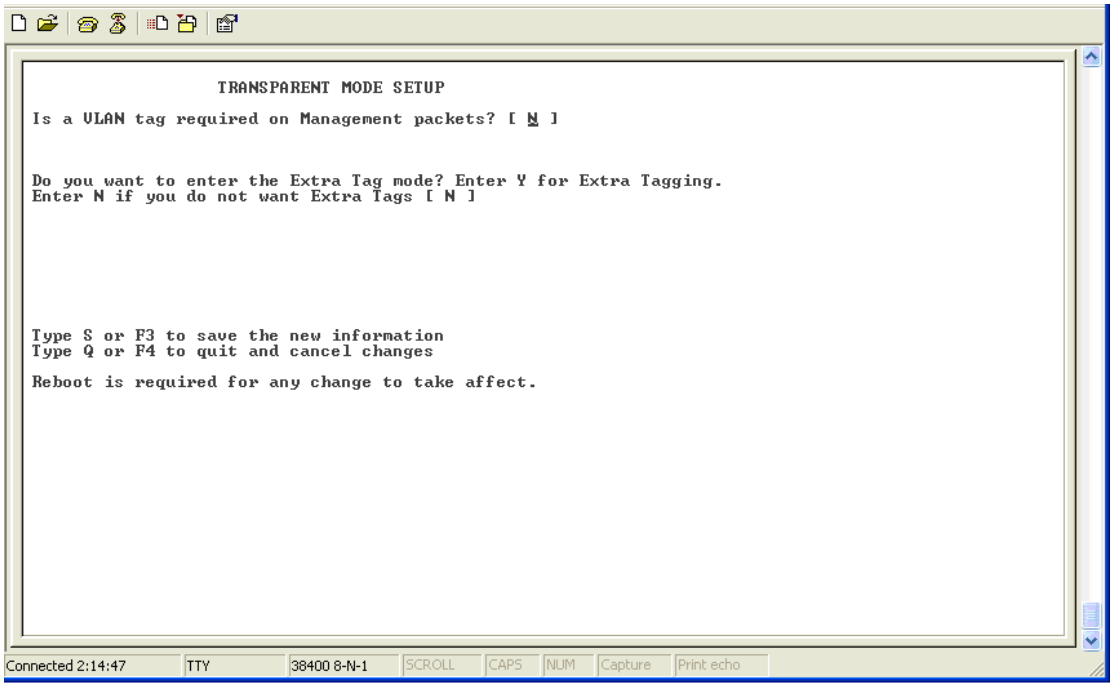
Press **S** to save the configuration.

Reboot the device and use the SNMP software to manage the device over the copper port.

Mode Two - Transparency with Untagged Management

This mode is designed to pass all tagged and extra-tagged customer traffic unchanged and must be managed using untagged traffic only. It does not add or remove tags.

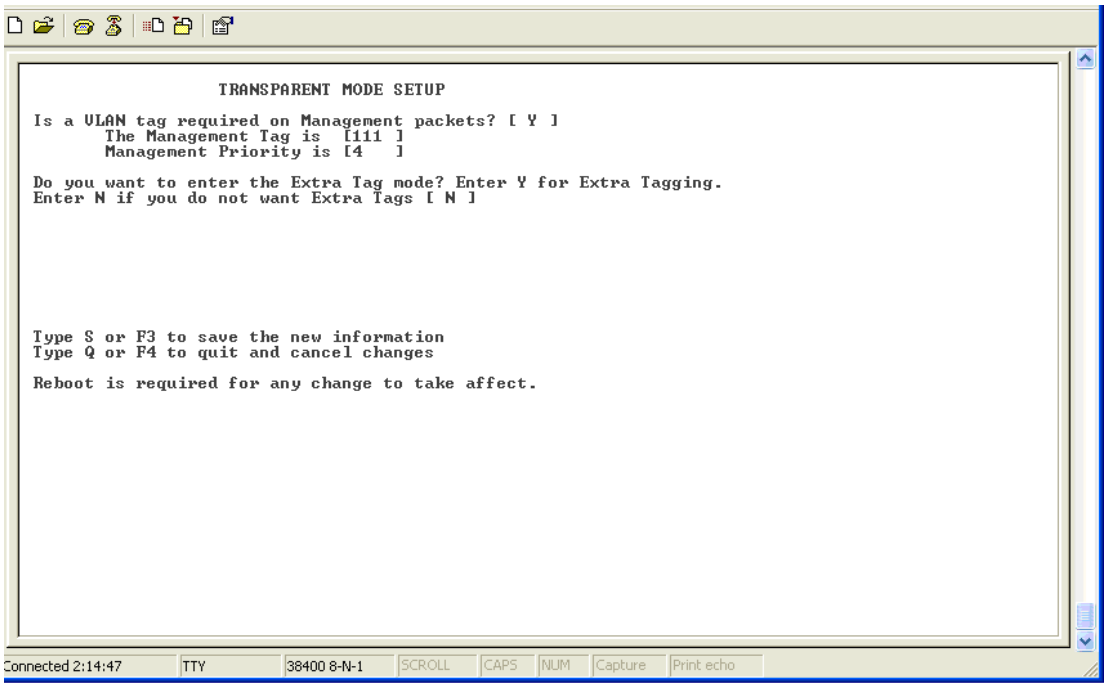
Select **Y** on the initial config screen and from the Transparent Mode Setup screen, select **N** in the fields.


TRANSPARENT MODE SETUP
Is a VLAN tag required on Management packets? [N]
Do you want to enter the Extra Tag mode? Enter Y for Extra Tagging.
Enter N if you do not want Extra Tags [N]
Type S or F3 to save the new information
Type Q or F4 to quit and cancel changes
Reboot is required for any change to take affect.
Connected 2:14:47
TTY
38400 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo

Mode Three - Transparency with Tagged Management

This mode will pass all tagged and untagged customer traffic. Management traffic must be tagged. It does not add or remove tags.

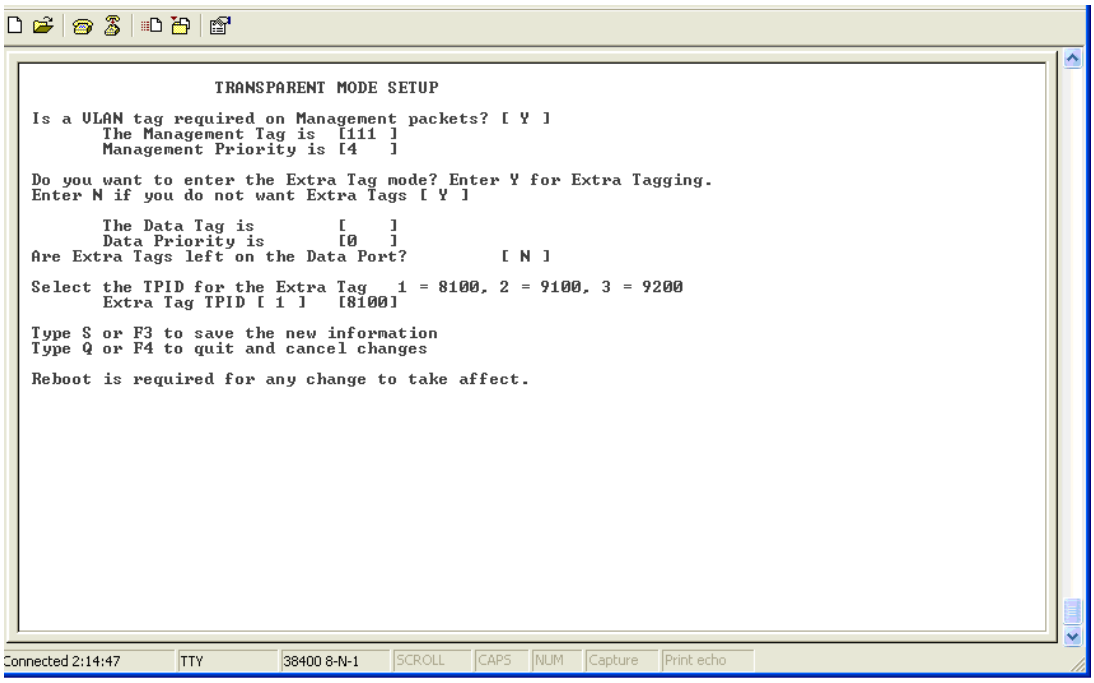
Select **Y** on the initial config screen. From the Transparent Mode Setup screen, select **Y** and enter the Management Tag.


TRANSPARENT MODE SETUP
Is a VLAN tag required on Management packets? [Y]
The Management Tag is [111]
Management Priority is [4]
Do you want to enter the Extra Tag mode? Enter Y for Extra Tagging.
Enter N if you do not want Extra Tags [N]
Type S or F3 to save the new information
Type Q or F4 to quit and cancel changes
Reboot is required for any change to take affect.
Connected 2:14:47
TTY
38400 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo

Mode Four - Transparency with Extra Tagging (or Q-in-Q)

This mode is designed to either pass all customer traffic with the defined extra tag (Q-in-Q) or add and remove the defined extra tag (Q-in-Q) on all customer traffic. Management traffic can be tagged or untagged.

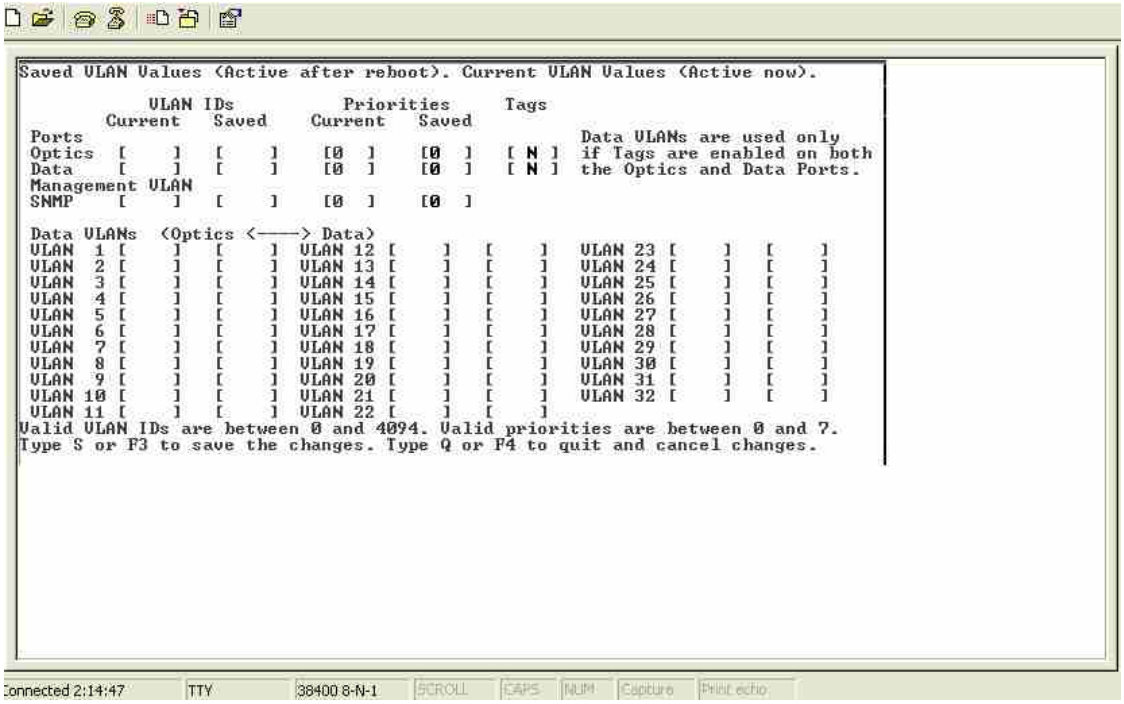
Select **Y** on the initial config screen and then, select **Y** when asked to select Extra Tags. When setting this operation mode, the question "Are Extra Tags left on the Data Port" should be answered **NO** for the remote IE-MiniFiberLinX-II and **YES** for the host connection.


TRANSPARENT MODE SETUP
Is a VLAN tag required on Management packets? [Y]
The Management Tag is [111]
Management Priority is [4]
Do you want to enter the Extra Tag mode? Enter Y for Extra Tagging.
Enter N if you do not want Extra Tags [Y]
The Data Tag is [ ]
Data Priority is [0]
Are Extra Tags left on the Data Port? [N]
Select the TPID for the Extra Tag 1 = 8100, 2 = 9100, 3 = 9200
Extra Tag TPID [1] [8100]
Type S or F3 to save the new information
Type Q or F4 to quit and cancel changes
Reboot is required for any change to take affect.
Connected 2:14:47
TTY
38400 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo

Mode Five - VLAN Filter

This mode is designed to only pass traffic with any of the 32 tags that have been identified in the user-defined table. No untagged traffic can pass and management traffic must be tagged. No tags are added or removed from the traffic. Select **N** on the initial config screen and then setup the VLAN screen.

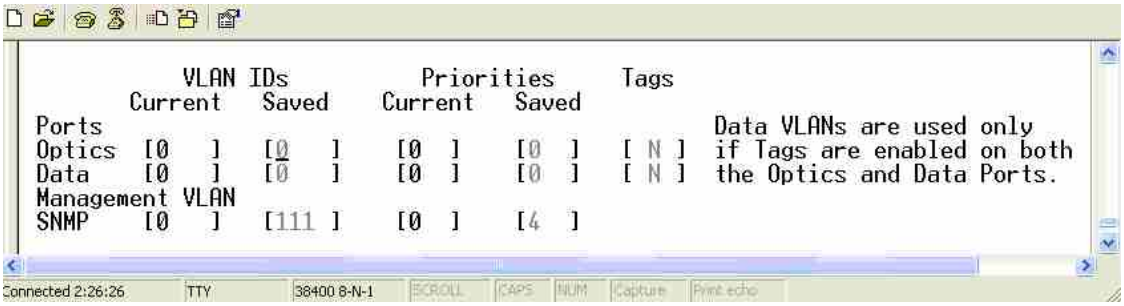
VLAN IDs can be any number between 1 and 4,094.


Saved VLAN Values (Active after reboot). Current VLAN Values (Active now).
VLAN IDs Priorities Tags
Current Saved Current Saved
Ports
Optics [ ] [ ] [0] [0] [N]
Data [ ] [ ] [0] [0] [N]
Management VLAN
SNMP [ ] [ ] [0] [0]
Data VLANs are used only if Tags are enabled on both the Optics and Data Ports.
Data VLANs (Optics <——> Data)
VLAN 1 [ ] [ ] VLAN 12 [ ] [ ] VLAN 23 [ ] [ ]
VLAN 2 [ ] [ ] VLAN 13 [ ] [ ] VLAN 24 [ ] [ ]
VLAN 3 [ ] [ ] VLAN 14 [ ] [ ] VLAN 25 [ ] [ ]
VLAN 4 [ ] [ ] VLAN 15 [ ] [ ] VLAN 26 [ ] [ ]
VLAN 5 [ ] [ ] VLAN 16 [ ] [ ] VLAN 27 [ ] [ ]
VLAN 6 [ ] [ ] VLAN 17 [ ] [ ] VLAN 28 [ ] [ ]
VLAN 7 [ ] [ ] VLAN 18 [ ] [ ] VLAN 29 [ ] [ ]
VLAN 8 [ ] [ ] VLAN 19 [ ] [ ] VLAN 30 [ ] [ ]
VLAN 9 [ ] [ ] VLAN 20 [ ] [ ] VLAN 31 [ ] [ ]
VLAN 10 [ ] [ ] VLAN 21 [ ] [ ] VLAN 32 [ ] [ ]
VLAN 11 [ ] [ ] VLAN 22 [ ] [ ]
Valid VLAN IDs are between 0 and 4094. Valid priorities are between 0 and 7.
Type S or F3 to save the changes. Type Q or F4 to quit and cancel changes.
Connected 2:14:47 TTY 38400 8-N-1 SCROLL CAPS NUM Capture Print echo

Mode Six - Port VLAN

This mode tags all customer traffic received by the copper port going to the fiber port, untagging traffic conversely. This tag is entered as the Data VLAN tag with the optical Tags selected as **YES** to indicate it is added at the egress of the optical port.

Select **N** on the initial config screen and then setup the VLAN screen.


VLAN IDs Priorities Tags
Current Saved Current Saved
Ports
Optics [0] [0] [0] [0] [N]
Data [0] [0] [0] [0] [N]
Management VLAN
SNMP [0] [111] [0] [4]
Data VLANs are used only if Tags are enabled on both the Optics and Data Ports.
Connected 2:26:26 TTY 38400 8-N-1 SCROLL CAPS NUM Capture Print echo

The table below displays how the settings are entered.

	VLAN	*Priority*	*Tags*
Optical			*Yes*
Data	*Tag2*	*4*	*No*
Mgmt (SNMP)	*Tag1*	*1*	*Yes*

System Description

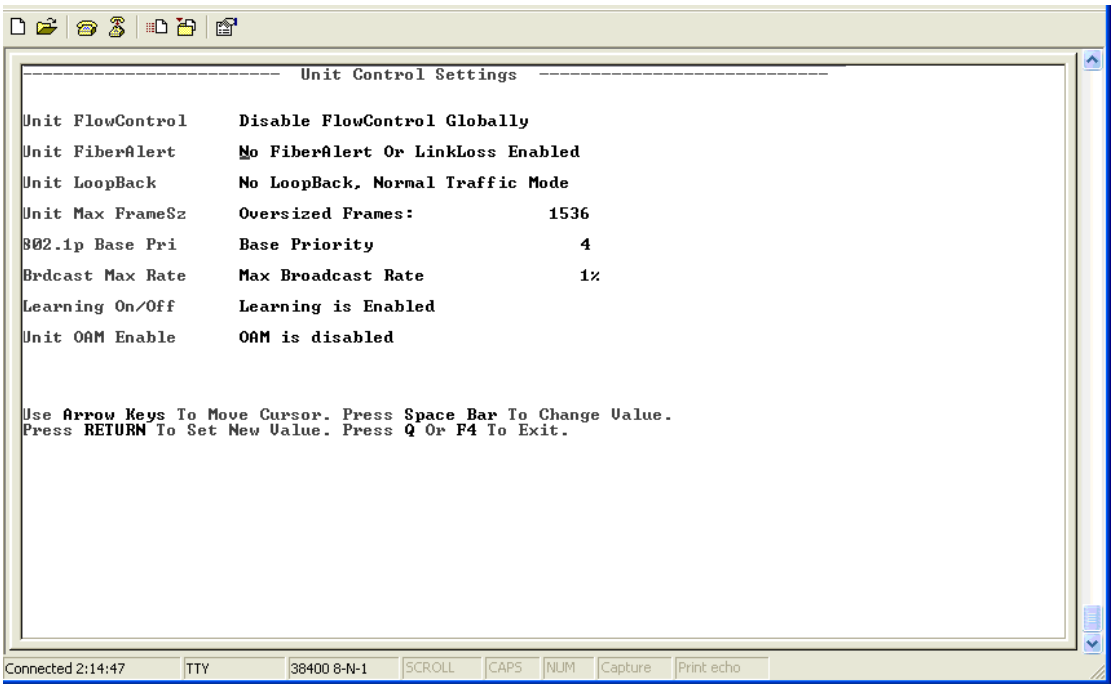
Sysdescr offers the options of assigning a system name, System Contact System Location, Unit Description and individual Port names. Enter a description or name, up to 32 characters per line. Press the **Enter** key to complete the editing task.

To change the MIB name of the IE-MiniFiberLinX-II as it appears on the network, type **sysname** and press **Enter**. Enter a new name, not exceeding 16 characters in length.

Unit Control Settings

Serial/Telnet sessions display unit status as well as allowing configuration of some of the IE-MiniFiberLinX-II features. Type **unit** and press **Enter** to be taken to the Unit screen. From this screen, view the settings for FlowControl, FiberAlert, LoopBack, Maximum Frame Size, and 802.1p Base Priority.

NOTE
Requires firmware version B2 or higher.


Unit Control Settings
Unit FlowControl Disable FlowControl Globally
Unit FiberAlert No FiberAlert Or LinkLoss Enabled
Unit LoopBack No LoopBack, Normal Traffic Mode
Unit Max FrameSz Oversized Frames: 1536
802.1p Base Pri Base Priority 4
Brdcast Max Rate Max Broadcast Rate 1%
Learning On/Off Learning is Enabled
Unit OAM Enable OAM is disabled
Use Arrow Keys To Move Cursor. Press Space Bar To Change Value.
Press RETURN To Set New Value. Press Q Or F4 To Exit.
Connected 2:14:47
TTY
38400 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo

Use the arrow keys to navigate and the Space Bar to change the values on this screen.

These settings include:

Unit FlowControl	Enable/Disable FlowControl
Unit FiberAlert	Enable/Disable FiberAlert
Unit LoopBack	Enable/Disable the various LoopBack testing modes
Unit Max FrameSz	Set the maximum Frame Size to pass through the ports: 1518, 1522, 1536, or 1916.

802.1p Base Pri Set the level of 802.1p base priority (3 or 4).

The IE-MiniFiberLinX-II has two outgoing queues; one for high priority traffic and one for low priority traffic. If the Base VLAN Priority is 4 for example, 0-3 are low priority and 4-7 are high priority. If the Base VLAN Priority is changed to 3, 0-2 are low priority and 3-7 are high priority.

Serial Configuration/Telnet Session

Access to the IE-MiniFiberLinX-II can be managed by typing accounts and pressing **Enter** from the command screen.

On the screen that appears, press **A** to add a user, entering the user's information in the appropriate fields. To delete a user, press **D** for the user selected. Pressing any other button will exit this screen.

NOTE
User rights only allow viewing of status/settings but not changing of settings.

To log onto the unit through the serial port, connect a PC to the IE-MiniFiberLinX-II using the included adapter. Set the computer/terminal for VT-100 emulation, with the following settings: 38.4K baud, 8 data bits, 1 stop bit, no parity, no FlowControl.

Enter the User Name and Password as admin (which is the default setting), when connecting through Telnet/HyperTerminal. A new User Name and Password should be set after signing on the first time.

Assign the IE-MiniFiberLinX-II an IP address before using a Telnet session (***the default IP address is 10.10.10.10***). All configurations performed using the serial port can also be performed using Telnet. Multiple accounts can be assigned with individual names and passwords.

Each account can be assigned one of the following authority roles:

User This role can only see status, change a password, and **reboot**.

Operator This role can perform User role functions and change settings.

Administrator This role can perform Operator role functions, add/delete accounts, and use the **cleandb** command. Account access through the serial port is at the Administrators level (default).

DHCP

DHCP Disable (Static IP Addressing)

DHCP is disabled in the default configuration. Initially, modules are assigned a Static default IP Address of 10.10.10.10. Changes to the Static IP Address can be added manually through iConfig, an RS-232 Serial session, or Telnet. The changes will be initiated following reboot of the module.

DHCP Enable (Dynamic IP Addressing)

If a DHCP server is present on the network and DHCP is enabled, the DHCP client will initiate a dialogue with the server during the boot up sequence. The server will then issue an IP address to the management card. Once the new IP address is received, the SNMP Management Module will reboot so that the new IP address will take effect. Refer to About Serial Port Configuration for more information about Enabling/Disabling DHCP. When there is no DHCP server on the network, use iConfig or serial configuration to manually set the IP addresses.

When DHCP is enabled, the IP address (default 10.10.10.10 or user configured) is saved. When DHCP is disabled, the saved IP address will be reinstated and the device will reboot.

DHCP servers give out lease times: devices renew their leases based on the administrator-specified time. If a device cannot renew its lease, and the lease expires, the device will be given the IP address 10.10.10.10 and will reboot.

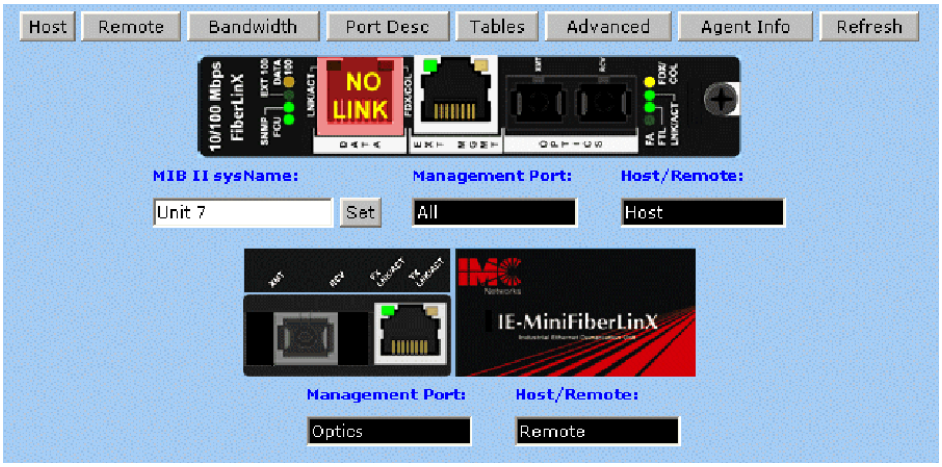
Using iView²

iView² is IMC Networks' management software, providing network management in an easy to use GUI. Once iView² is installed on a network management PC using a Windows operating system, use the Start menu to access iView².

NOTE
Windows SNMP services must be installed to receive traps.

The left side of the iView² screen will display the IMC Networks products on the network. Click the connection for the IE-MiniFiberLinX-II to open its iView² screen.

The example shows a connection to a FiberLinX but this could vary depending on the connection. When configuring the IE-MiniFiberLinX-II as a standalone unit, only the IE-MiniFiberLinX-II will appear.



A navigation bar on the top of the screen displays the options for configuring the IE-MiniFiberLinX-II connection.

These options include the following:

Host Displays the configuration screen for the Host connection.

Remote Displays the configuration screen for the Remote connection. This will show the IE-MiniFiberLinX-II configuration information. Information on this screen is provided on the following page.

NOTE
The Host and Remote buttons will not appear when configuring the IE-MiniFiberLinX-II alone. In this setup, a Configuration button will appear with the same settings.

Bandwidth Displays the Bandwidth Limitation Settings.

Port Desc Displays a screen for setting port descriptions. Each name should not exceed 32 characters or include any spaces.

Tables Displays a screen showing network performance statistics.

Advanced Displays the IE-MiniFiberLinX-II advanced settings.

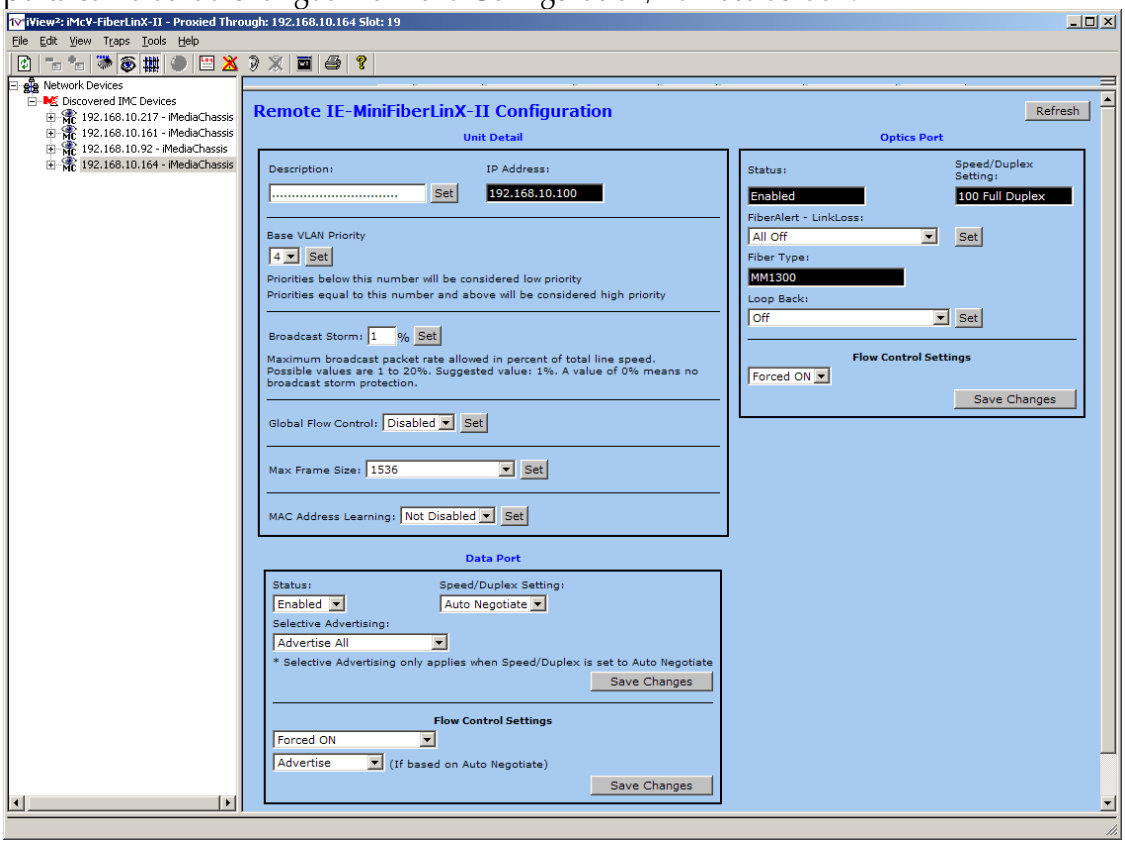
Agent Info Displays information about the SNMP Management software.

Refresh Reloads the content of a window with the most current data.

The Configuration/Remote Screen

Depending on whether the IE-MiniFiberLinX-II is being set up as a standalone or in a Host/Remote connection, the Configuration or Remote buttons will show a screen for configuring the IE-MiniFiberLinX-II settings.

In addition to allowing setting changes on the IE-MiniFiberLinX-II, settings on the ports can also be changed from the Configuration/Remote screen.



For information or instructions on the use of UMA (Unified Management Agent), refer to the SNMP Management module manual.

Configuration File Save/Restore Function

Requirements

FiberLinX-II family series:

Minimum firmware version required:
IE-MiniFiberLinX-II: B1 or higher,
Required iView² version: 1.8.4 or higher

The Configuration File Save/Restore Function allows a user the ability to backup all the configuration settings of a unit. With this backup, a user can restore settings to a unit if necessary or use this backup to apply the same settings to a different unit.

All configurable managed objects are saved in a configuration file that is stored in the unit's Large File Area. This includes all configurable settings such as VLAN

configurations, IP Address configuration and SNMP agent settings. The configuration file can be transferred from the unit to a PC and saved to disk through the iConfig protocol. The configuration file can be transferred from a PC to a unit of the same type through iConfig or TFTP into the unit's Large File Area. After the transfer is complete, the unit copies the configuration to flash and reboots.

The configuration file's contents is device-type specific and can be identified by iConfig as a configuration file as well as to what type of device it is applicable to.

How to Save a Configuration File

To save a configuration file, use the iConfig tool. Log into the unit through iConfig, navigate to the iConfig Administration tab, select the "S**ave Configuration**" button, wherein a prompt requires a file name, as well as any user notes. From this point the file will be transferred to the PC's disk through the iConfig network protocol.

Once the file is saved to disk it can be restored to the device or sent to another like device through iConfig or TFTP.

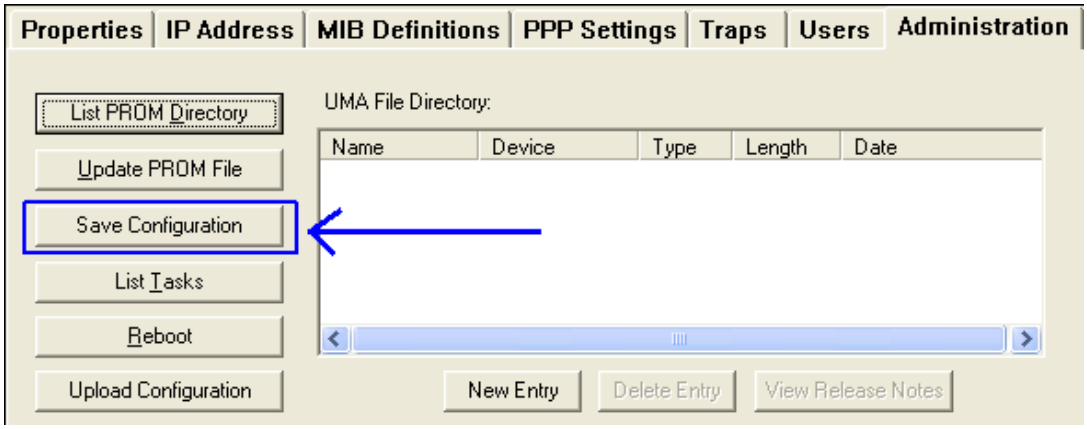
For iConfig The user will log into a unit, select the Administration tab, select the **Upload Configuration** button, be prompted to locate a configuration file on the PC's disk. From this point the file transfer will take place from the PC to the unit. After a successful transfer, the user will be prompted to Reboot to make the new configuration active.

For TFTP The user will log into the unit either through a serial port session or through Telnet. They will navigate to the download command page, enter the TFTP server's IP address and enter the configuration file name, then press **Enter** to start the download process. Once the download is successful, the user will be prompted to apply the settings. The device must be rebooted after applying the settings to make them active.

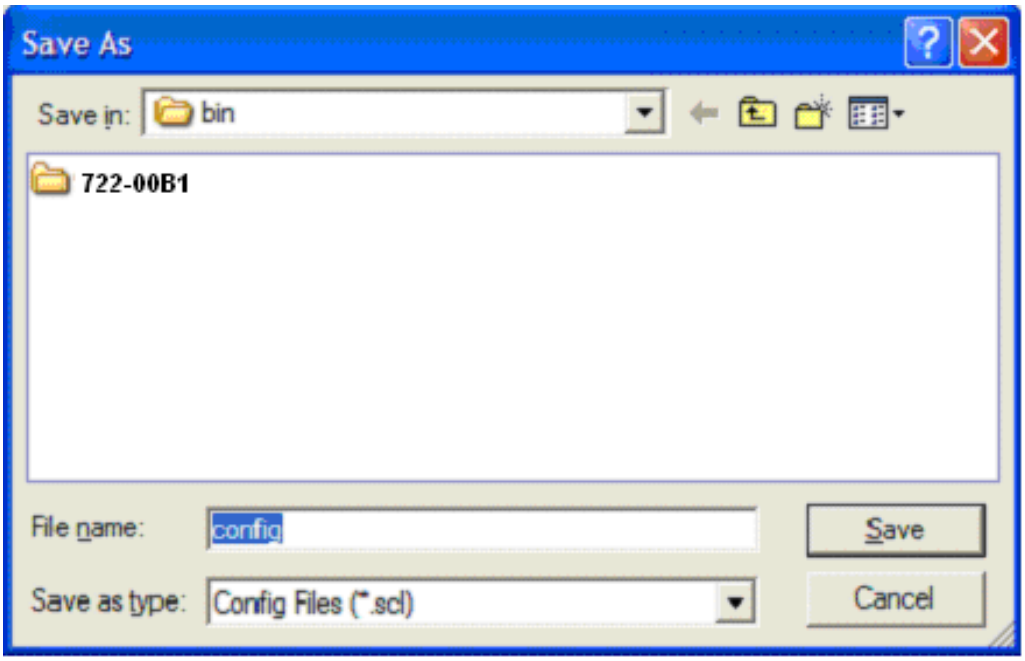
By default, the IP Address configuration currently on the device is kept intact and not overwritten by the new configuration file.

Saving a Configuration File to Disk:

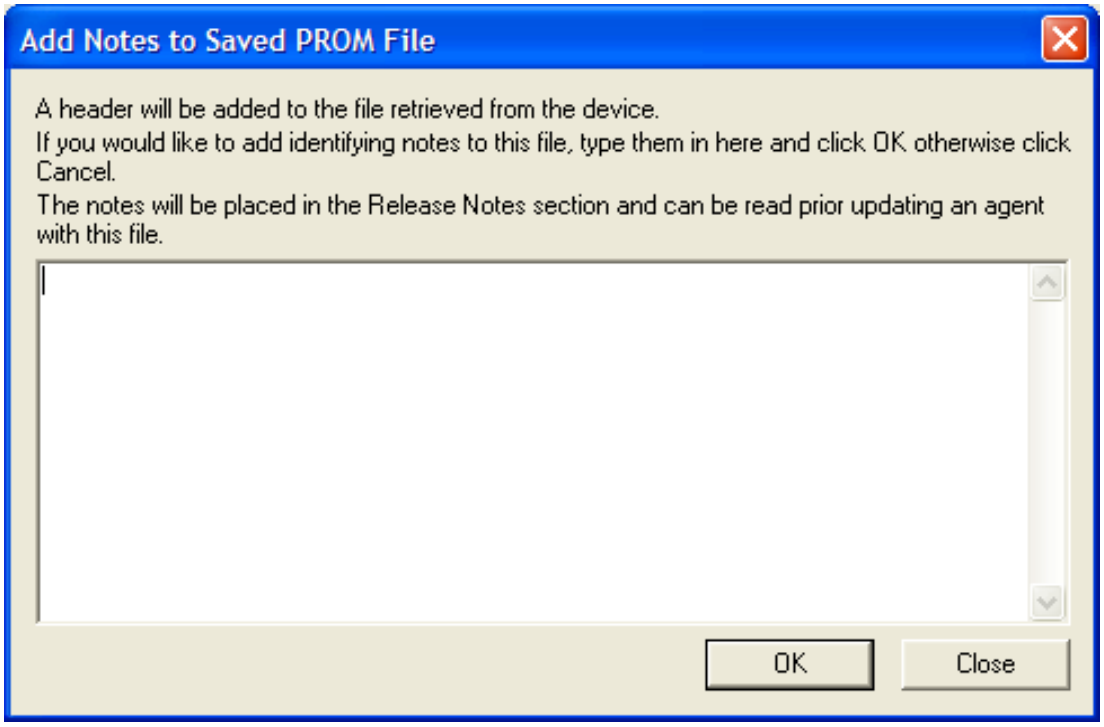
From the Administration Tab in iConfig click the **Save Configuration** button:



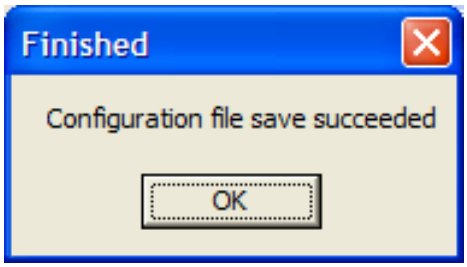
The user is prompted for a filename:



The user is prompted to enter any notes to the header of the saved file for future reference when uploading the file through iConfig:

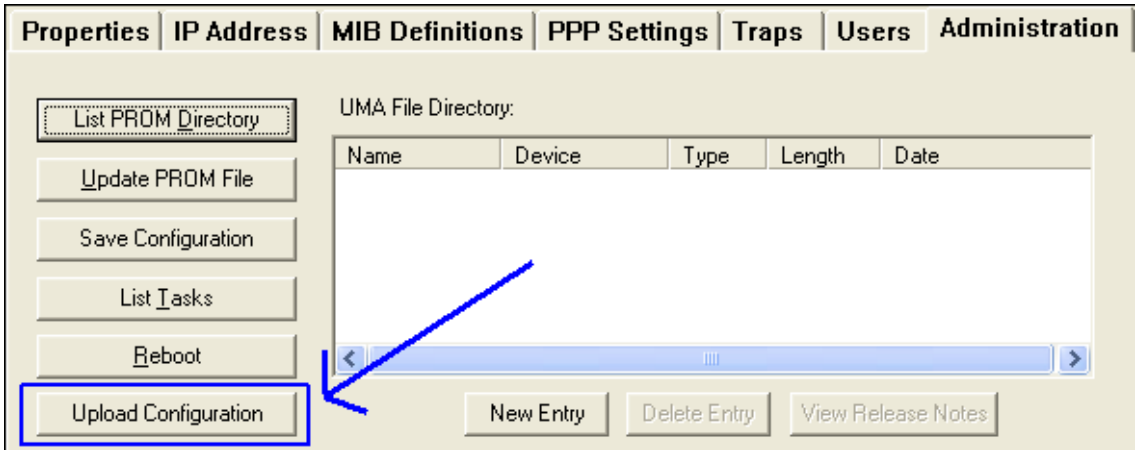

Add Notes to Saved PROM File
A header will be added to the file retrieved from the device.
If you would like to add identifying notes to this file, type them in here and click OK otherwise click Cancel.
The notes will be placed in the Release Notes section and can be read prior updating an agent with this file.
OK
Close

After the file transfer from the device to disk, the user is notified of the status:

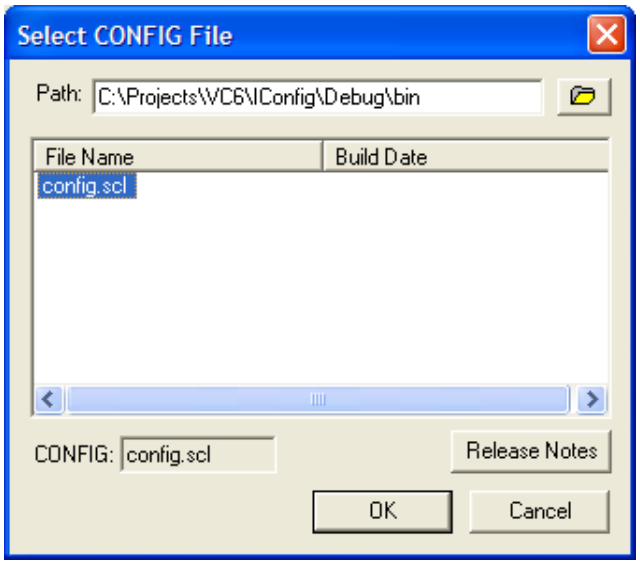


Uploading a Saved Configuration File through iConfig

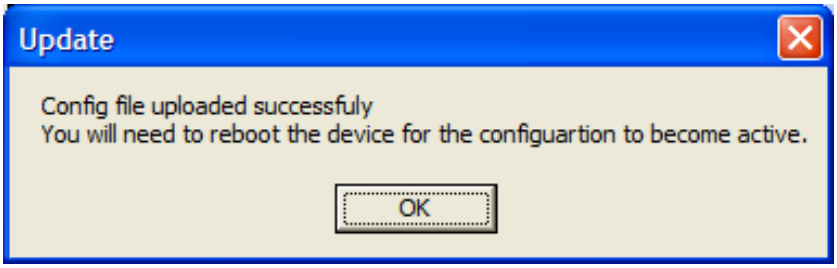
From the Administration Tab in iConfig click the **Upload Configuration** button:



The user will be prompted to select a configuration file. Once selected, the user can also view any notes that were added when the file was saved:

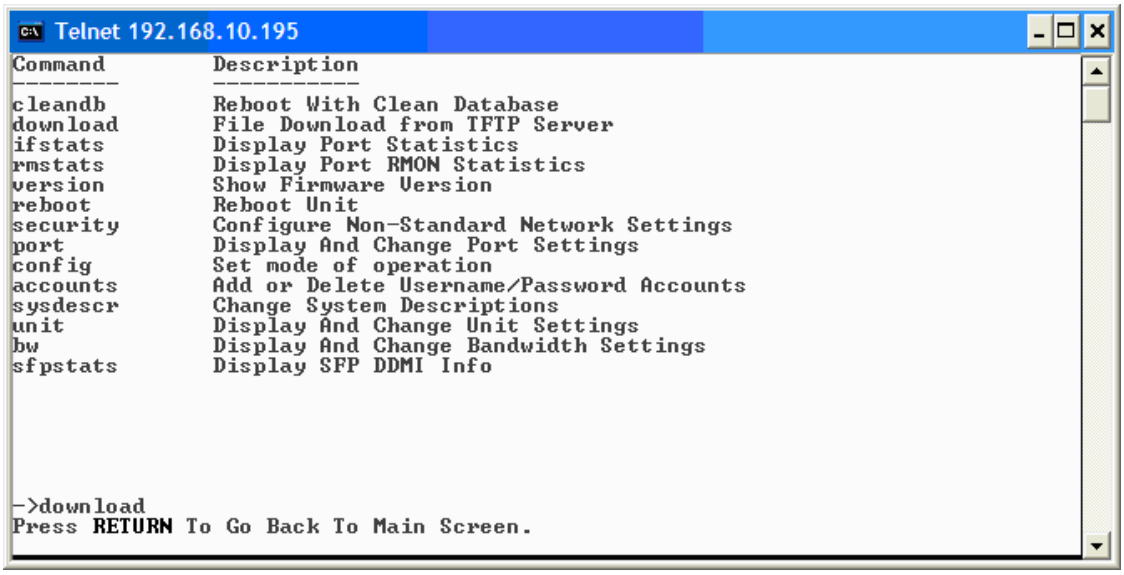


After selecting the configuration file, the file upload process begins; when completed, the user is notified of the status and also notified that a reboot is necessary for the new configuration to become active:

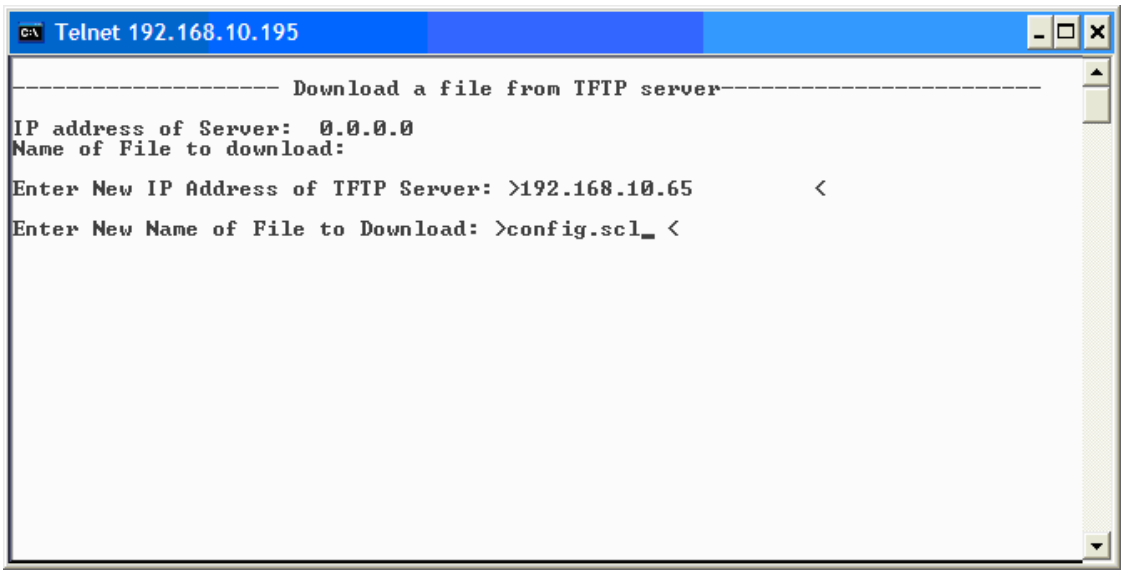


Uploading a Saved Configuration File through TFTP

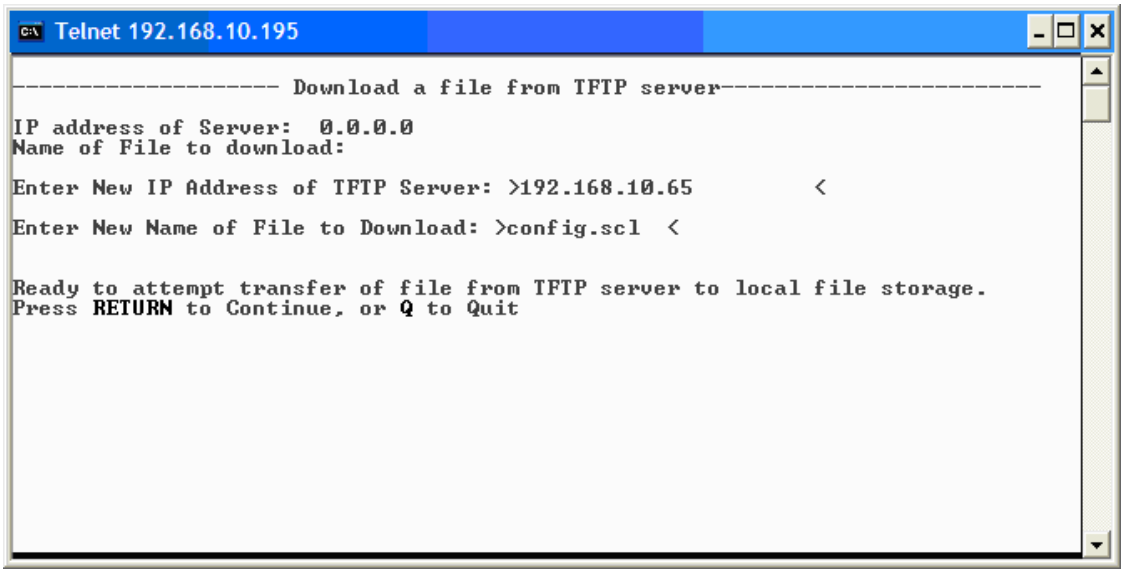
From the commands list in the CLI (Serial or Telnet) run the download command by typing in **download**:


Telnet 192.168.10.195
Command Description
cleandb Reboot With Clean Database
download File Download from TFTP Server
ifstats Display Port Statistics
rmstats Display Port RMON Statistics
version Show Firmware Version
reboot Reboot Unit
security Configure Non-Standard Network Settings
port Display And Change Port Settings
config Set mode of operation
accounts Add or Delete Username/Password Accounts
sysdescr Change System Descriptions
unit Display And Change Unit Settings
bw Display And Change Bandwidth Settings
sfpstats Display SFP DDMI Info
->download
Press RETURN To Go Back To Main Screen.

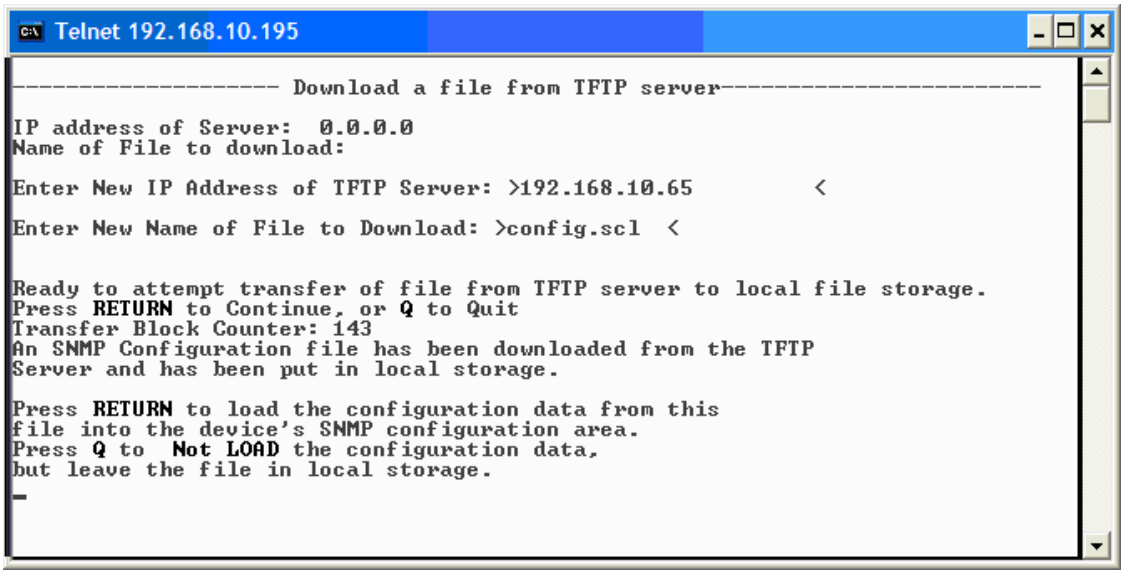
In the download command screen type in the IP Address of the TFTP server and the file name to retrieve.


Telnet 192.168.10.195
---------- Download a file from TFTP server----------
IP address of Server: 0.0.0.0
Name of File to download:
Enter New IP Address of TFTP Server: >192.168.10.65 <
Enter New Name of File to Download: >config.scl_ <

The user will be prompted to continue that retrieval process by pressing the **ENTER** key or cancel by typing "**Q**".


Telnet 192.168.10.195
---------- Download a file from TFTP server----------
IP address of Server: 0.0.0.0
Name of File to download:
Enter New IP Address of TFTP Server: >192.168.10.65 <
Enter New Name of File to Download: >config.scl <
Ready to attempt transfer of file from TFTP server to local file storage.
Press RETURN to Continue, or Q to Quit

After the transfer process is complete the user will be prompted to press the **Enter** key again to load the configuration file:


Telnet 192.168.10.195
---------- Download a file from TFTP server----------
IP address of Server: 0.0.0.0
Name of File to download:
Enter New IP Address of TFTP Server: >192.168.10.65 <
Enter New Name of File to Download: >config.scl <
Ready to attempt transfer of file from TFTP server to local file storage.
Press RETURN to Continue, or Q to Quit
Transfer Block Counter: 143
An SNMP Configuration file has been downloaded from the TFTP
Server and has been put in local storage.
Press RETURN to load the configuration data from this
file into the device's SNMP configuration area.
Press Q to Not LOAD the configuration data,
but leave the file in local storage.

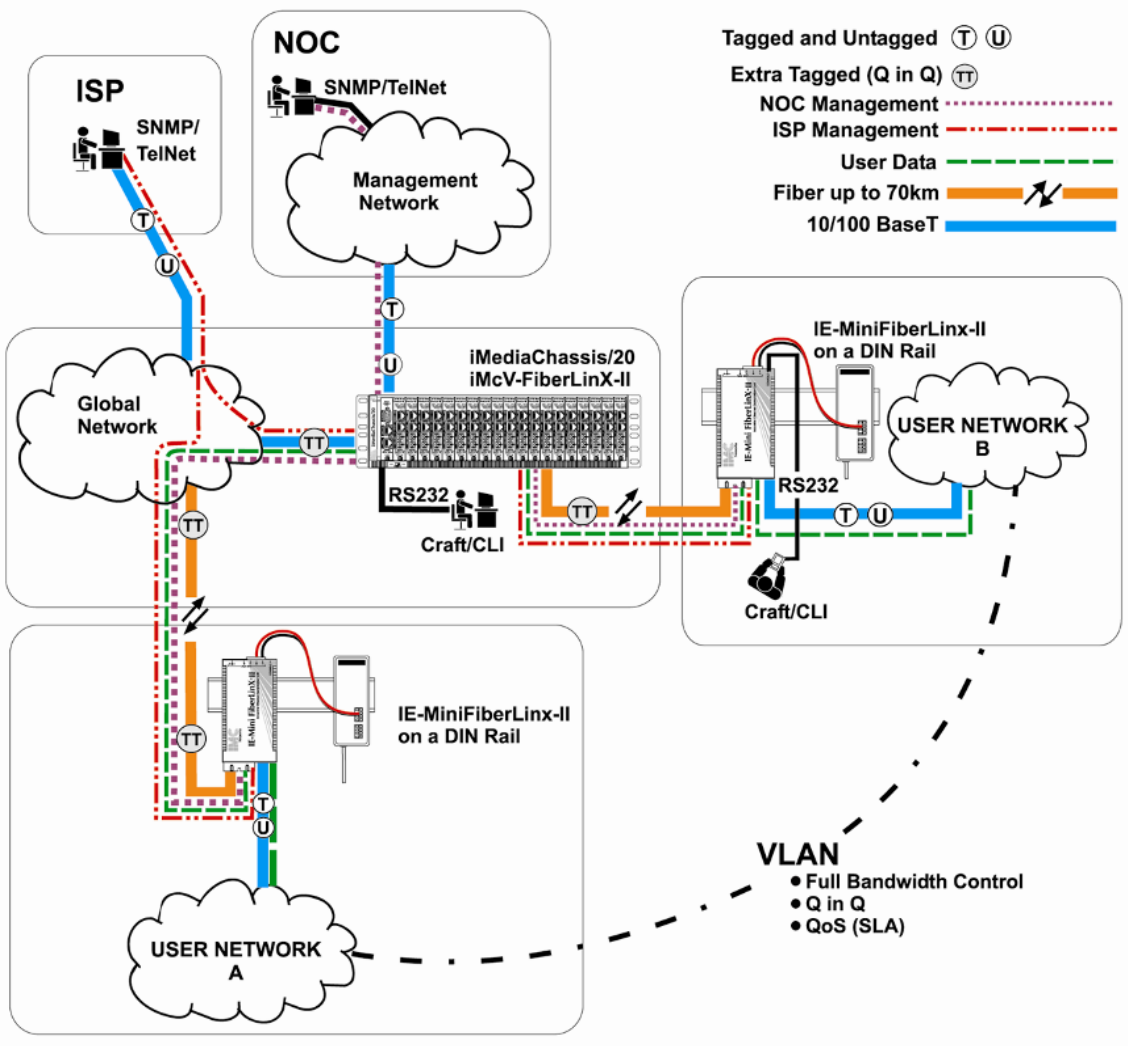
Once loaded into the device's SNMP memory area, the user will be prompted to **reboot** the device to make the new configuration active:

Product Applications

The IE-MiniFiberLinX-II comes with a variety of features for different network environments. When used with different types of IMC Products, some features can be enabled, such as extra tagging or "Q-in-Q", and different network setups come with different requirements. The network setup example below shows one deployment scenario with a full range of management options.

The IE-MiniFiberLinX-II can be setup two ways:

- One IE-MiniFiberLinX-II and an IMC Networks iMcV-FiberLinX-II for a Host/Remote application (one at each end)
- One IE-MiniFiberLinX-II for a standalone application

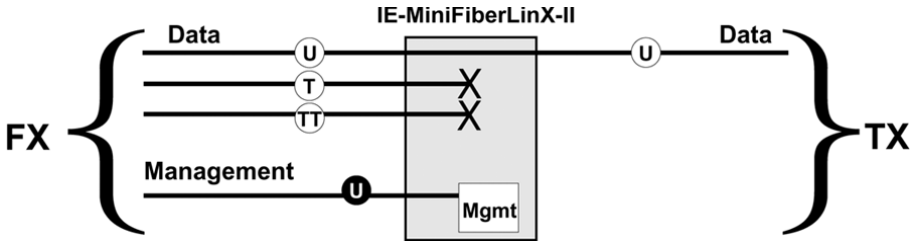


Modes of Operation

The following are application examples of Operation Modes for the IE-MiniFiberLinX-II. There are six modes of operation that can be configured through the Serial/Telnet session. All modes of operation block management traffic from the user network on the Data port.

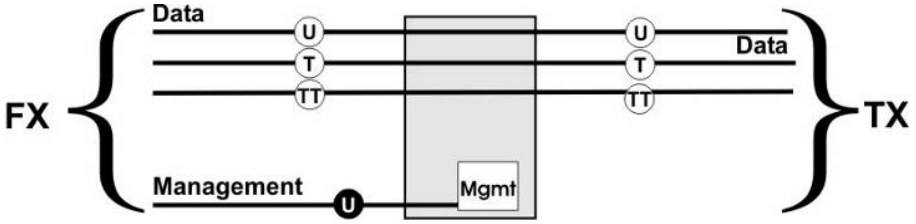
Mode One - Default

The default mode is provided to pass only untagged traffic.



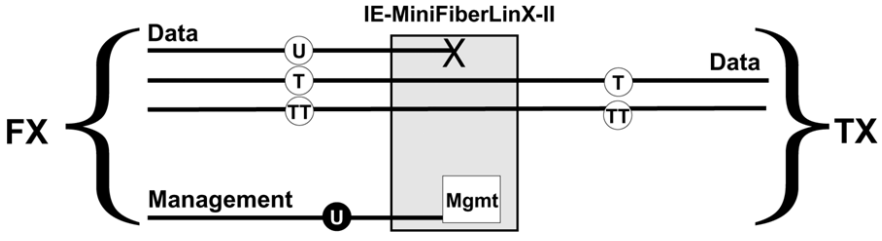
Default Plus

The Default Mode Plus allows tagged and untagged traffic to pass between the data and optics ports.



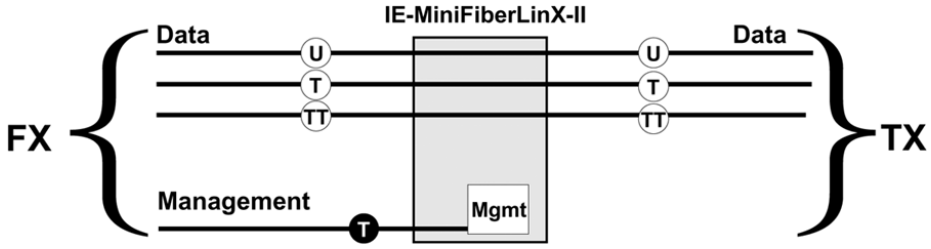
Mode Two - Transparency with Untagged Management

This mode is designed to pass all tagged and extra-tagged customer traffic unchanged and must be managed using untagged traffic only. It does not add or remove tags.



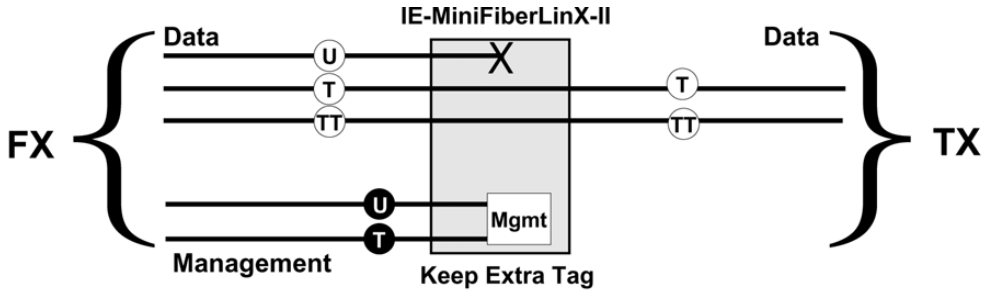
Mode Three - Transparency with Tagged Management

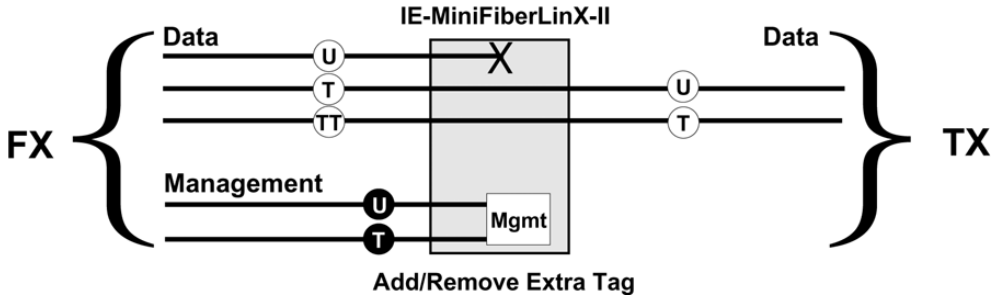
This mode will pass all tagged and untagged customer traffic. Management traffic must be tagged. It does not add or remove tags.



Mode Four - Transparency with Extra Tagging (or Q-in-Q)

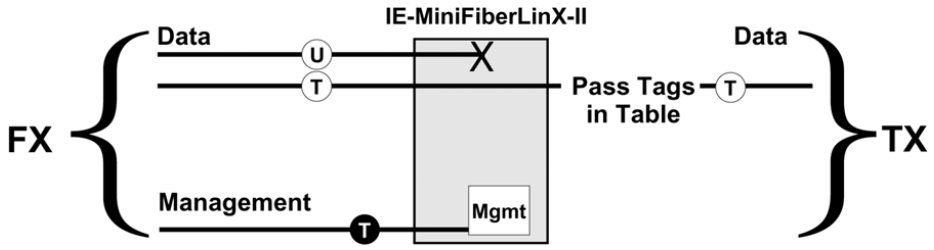
This mode is designed to either pass all customer traffic with the defined extra tag (Q-in-Q) or add and remove the defined extra tag (Q-in-Q) on all customer traffic. Management traffic can be tagged or untagged.





Mode Five - VLAN Filter

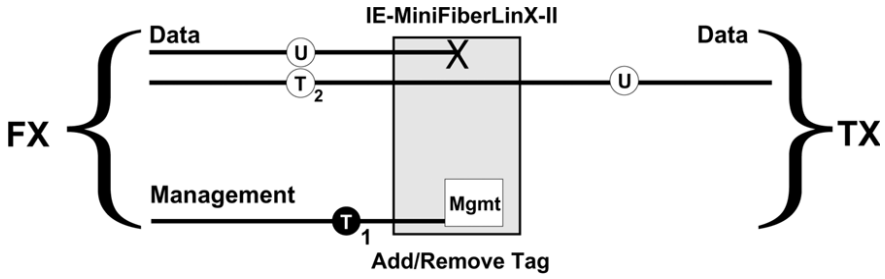
This mode is designed to only pass traffic with any of the 32 tags that have been identified in the user-defined table. No untagged traffic can pass and management traffic must be tagged. No tags are added or removed from the traffic.



NOTE
VLAN IDs can be any number between 1 and 4,094.

Mode Six - Port VLAN

This mode tags all customer traffic received by the copper port going to the fiber port, untagging traffic conversely. Management traffic must be tagged.

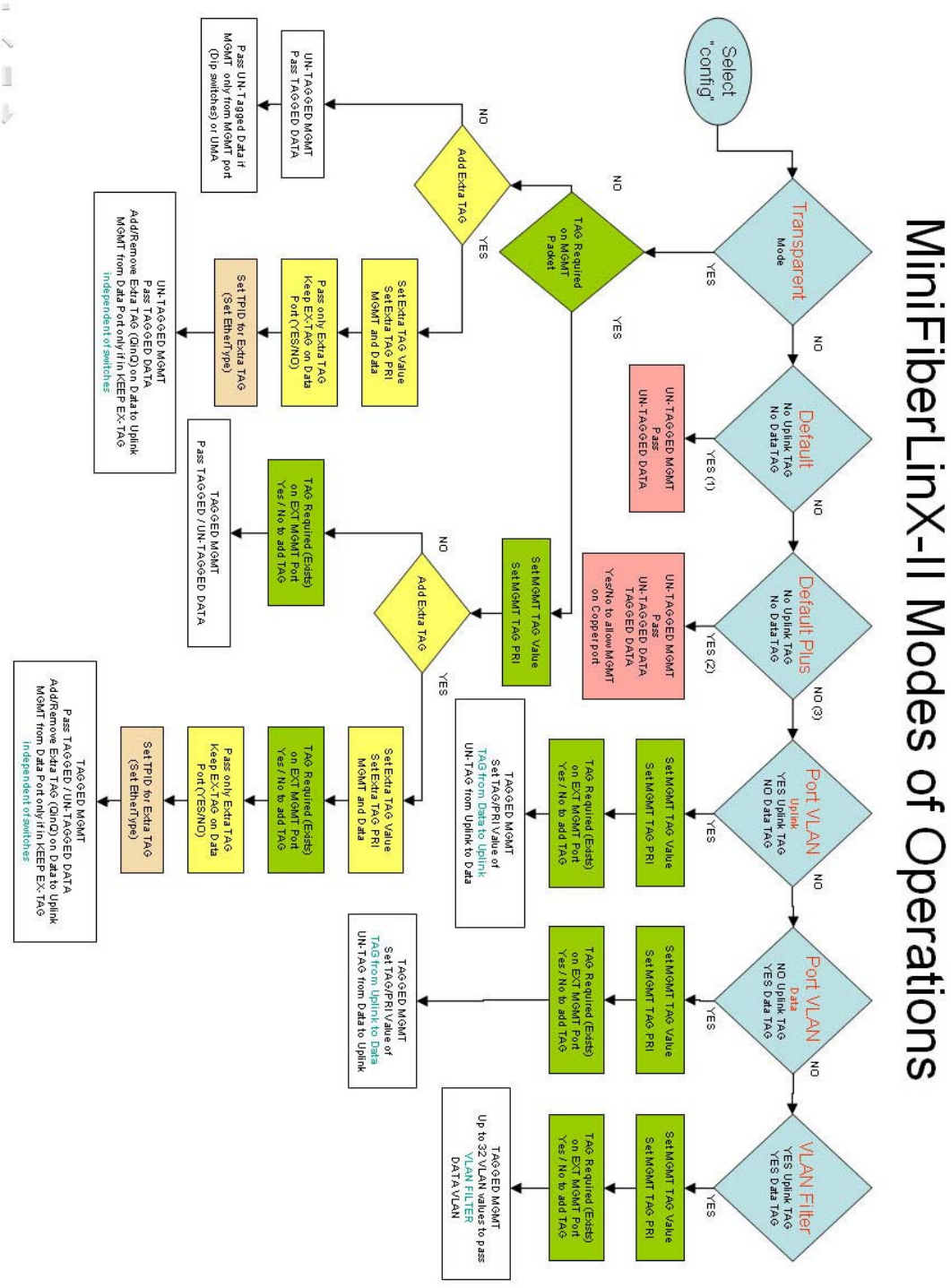


Troubleshooting

If a fiber connection cannot be established, perform the following to make sure that the fiber transceivers on the IE-MiniFiberLinX-II are not over/under driving the fiber receivers:

1. Make sure the fiber wavelength on both connected devices match (i.e. both are 1310 nm single-mode fiber).
2. Make sure that FiberAlert is enabled on only one unit when connecting an IE-MiniFiberLinX-II to another IMC Networks media converter with the FiberAlert feature.
3. Make sure the twisted-pair port speed on the IE-MiniFiberLinX-II matches that of the end devices connected to the IE-MiniFiberLinX-II. Configure the IE-MiniFiberLinX-II and its link partner to Auto Negotiation or, if using Force mode, be sure speed and duplex match.
4. Management (VLAN tagged or Untagged) traffic will not be allowed to pass through the DATA port and will only pass through the FIBER port.
5. When using the IE-MiniFiberLinX-II as a PD device, establish power first, check the LEDs to confirm this, and then connect the serial port in order to configure the device via a console session. If performing the steps in the reverse order, the unit will appear non functional. The same is true if connecting a DC terminal block.

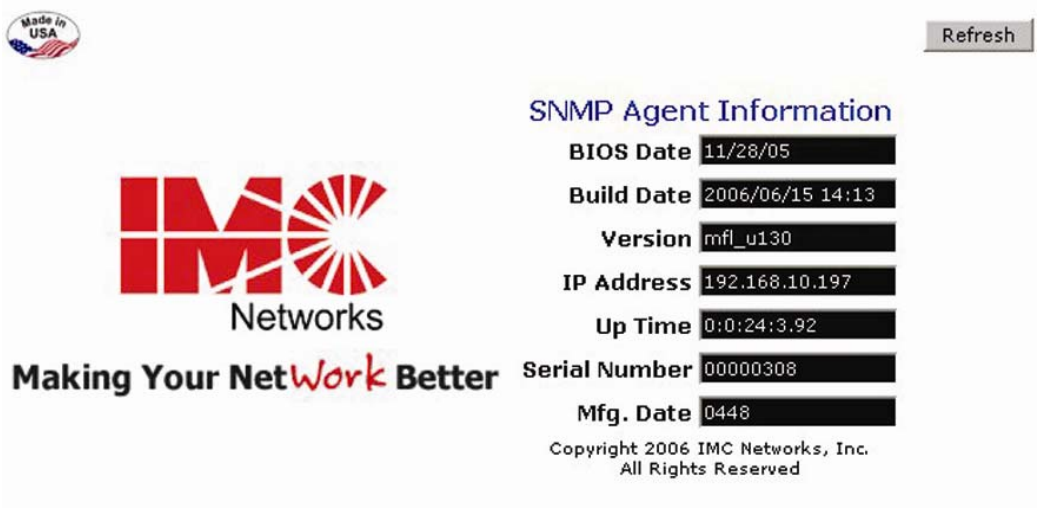
To restore the unit to factory default settings, use the **cleandb** function from the serial port management feature.


MiniFiberLinX-II Modes of Operations
Select "config"
Transparent Mode
Default No Uplink TAG No Data TAG
Default Plus No Uplink TAG No Data TAG
Port VLAN Uplink YES Uplink TAG NO Data TAG
Port VLAN Data NO Uplink TAG YES Data TAG
VLAN Filter YES Uplink TAG YES Data TAG
TAG Required on MGMT Packet
Add Extra TAG
UN-TAGGED MGMT Pass UN-TAGGED DATA
UN-TAGGED MGMT Pass UN-TAGGED DATA Yes/No to allow MGMT on Copperport
Set MGMT TAG Value Set MGMT TAG PRI
TAG Required (Exists) on EXT MGMT Port Yes / No to add TAG
Set Extra TAG Value Set Extra TAG PRI MGMT and Data
Pass only Extra TAG Keep EX-TAG on Data Port (YES/NO)
Set TPID for Extra TAG (Set EtherType)
Pass UN-Tagged Data if MGMT only from MGMT port (Dip switches) or UMA
TAGGED MGMT Set TAG/PRI Value of TAG from Data to Uplink UN-TAG from Uplink to Data
TAGGED MGMT Set TAG/PRI Value of TAG from Uplink to Data UN-TAG from Data to Uplink
TAGGED MGMT Up to 32 VLAN values to pass VLAN FILTER DATA VLAN
UN-TAGGED MGMT Pass TAGGED DATA Add/Remove Extra TAG (QinQ) on Data to Uplink MGMT from Data Port only if in KEEP EX-TAG independent of switches
TAGGED MGMT Pass TAGGED / UN-TAGGED DATA
TAGGED MGMT Pass TAGGED DATA Add/Remove Extra TAG (QinQ) on Data to Uplink MGMT from Data Port only if in KEEP EX-TAG independent of switches
YES
NO
YES (1)
YES (2)
NO (3)

For enlarged version go to IMC Networks website:
http://www.imcnetworks.com/Products/12_IE-MiniFiberLinX-II.html

The Agent Info Screen

Information about the SNMP Agent software managing the IE-MiniFiberLinX-II is contained on this screen.



Specifications

Input Specifications

AC Wall Adapter

100 to 240 ±10% V AC input, 5V DC output

DC Input Voltage

1A @ 5V DC to 0.1A @ 50V DC
IEEE 802.3af Power over Ethernet

Humidity

5 to 95% (non-condensing)

Operating Temperature

-31° to 158° F (-35° to 70° C) DC configuration
32° to 122° F (0° to 50° C) with AC wall adapter

Storage Temperature

-49° to 185° F (-45° to +85° C)

Shipping Weight

0.30 lbs (0.11 kg)

Dimensions

0.83″H x 1.80″W x 3.35″D (2.11 x 4.57 x 8.51 cm)

Fiber Optic Cleaning Guidelines

Fiber Optic transmitters and receivers are extremely susceptible to contamination by particles of dirt or dust, which can obstruct the optic path and cause performance degradation. Good system performance requires clean optics and connector ferrules.

1. Use fiber patch cords (or connectors, if you terminate your own fiber) only from a reputable supplier; low-quality components can cause many hard-to-diagnose problems in an installation.
2. Dust caps are installed at IMC Networks to ensure factory-clean optical devices. These protective caps should not be removed until the moment of connecting the fiber cable to the device. Should it be necessary to disconnect the fiber device, reinstall the protective dust caps.
3. Store spare caps in a dust-free environment such as a sealed plastic bag or box so that when reinstalled they do not introduce any contamination to the optics.
4. If you suspect that the optics have been contaminated, alternate between blasting with clean, dry, compressed air and flushing with methanol to remove particles of dirt.

Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can cause damage to any product, add-in modules or stand alone units, containing electronic components. Always observe the following precautions when installing or handling these kinds of products

1. Do not remove unit from its protective packaging until ready to install.
2. Wear an ESD wrist grounding strap before handling any module or component. If the wrist strap is not available, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.
3. Hold the units by the edges; do not touch the electronic components or gold connectors.
4. After removal, always place the boards on a grounded, static-free surface, ESD pad or in a proper ESD bag. Do not slide the modules or stand alone units over any surface.

WARNING! Integrated circuits and fiber optic components are extremely susceptible to electrostatic discharge damage. Do not handle these components directly unless you are a qualified service technician and use tools and techniques that conform to accepted industry practices.

Safety Certifications

UL/CUL: Listed to Safety of Information Technology Equipment, including Electrical Business Equipment.

CE: The products described herein comply with the Council Directive on Electromagnetic Compatibility (2004/108/EC) and the Council Directive on Electrical Equipment Designed for use within Certain Voltage Limits (2006/95/EC). Certified to Safety of Information Technology Equipment, Including Electrical Business Equipment. For further details, contact IMC Networks.

Class 1 Laser product, Luokan 1 Laserlaite,
Laser Klasse 1, Appareil A'Laser de Classe 1

European Directive 2002/96/EC (WEEE) requires that any equipment that bears this symbol on product or packaging must not be disposed of with unsorted municipal waste. This symbol indicates that the equipment should be disposed of separately from regular household waste. It is the consumer's responsibility to dispose of this and all equipment so marked through designated collection facilities appointed by government or local authorities. Following these steps through proper disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about proper disposal, please contact local authorities, waste disposal services, or the point of purchase for this equipment.

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